

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.11.93
Test oil : ISO 4113

Combination No. : 0 402 646 954X

Injection pump
Pump designation : PE6P120A320LS7834
: -10
EP type number : 0 412 626 853

Governor
Governor design. : RQ300/1050PA993-5
Governor no. : 0 421 801 610

Cust. part No. : 0210740502

Customer spec. information
Customer : MB-NFZ
Motor : OM401 LA
Power KW : 213.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.55
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.10
Tolerance mm : + 0.05

Det. quantity
 cm³/1000 strokes : 217.5
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0
 Rated speed rpm : 300
 Rack travel in mm : 6.20
 Tolerance mm : + - 0.10
 Det. quantity
 cm³/1000 strokes : 19.0
 Tolerance
 cm³/1000 strokes : + - 3.0
 Check tolerance
 cm³/1000S. : + - 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : 109
 Rated speed rpm : 600
 Rack travel in mm : 20.00
 Tolerance mm : + - 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
 Aneroid pressure
 hPa : 1500
 Det. quantity
 cm³/1000 strokes : 217.5

Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 97.0
 tolerance degree : + - 4.0
 RATED SPEED
 rack travel mm : 13.10
 Rated speed rpm : 1098
 Tolerance 1/min : + - 8
 rack travel mm : 4.00
 Rated speed rpm : 1190
 Tolerance 1/min : + - 15
 rack travel mm : 0.75
 Tolerance mm : + - 0.75
 Rated speed rpm : 1300

LOW IDLE

control lever
 position degree : 72.0
 tolerance degree : + - 4.0
 Setting point w/out bumper spring
 Rated speed rpm : 200
 CRT mm min. : > 7.50
 Testing:
 Rated speed rpm : 300
 rack travel mm : 6.20
 Tolerance mm : + - 0.10
 rack travel mm : 2.00
 Rated speed rpm : 400
 Tolerance 1/min : + - 20
 TORQUE CONTROL
 Rated speed rpm : 1050

rack travel mm : 14.10
 Tolerance mm : + - 0.05

 Rated speed rpm : 800
 rack travel mm : 14.10
 Tolerance mm : + - 0.05

 Rated speed rpm : 600
 rack travel mm : 14.10
 Tolerance mm : + - 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
 Pressure hPa : 1500
 rack travel mm : 14.10
 Tolerance mm : + - 0.05

 Rated speed rpm : 400
 Pressure hPa : -
 rack travel mm : 9.45
 Tolerance mm : + - 0.15

MEASUREMENT

Pressure hPa : -
 Rated speed rpm : 500
 rack travel mm : 9.45
 Tolerance mm : + - 0.15

 Rated speed rpm : 400

 Pressure hPa : 350
 Tolerance mm : + - 0.05

 Pressure hPa : 550
 rack travel mm : 13.30
 Tolerance mm : + - 0.10

Start interlock

Rated speed rpm : > 100
 Rated speed rpm : < 220

 Check speed 1/min : > 80
 Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1500
 Rated speed rpm : 800
 Del. quantity cm³/1000 strokes : 218.0
 Tolerance cm³/1000 strokes : + - 2.0
 Check tolerance cm³/1000S. : + - 5.0
 Spread Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

rack travel mm : 14.10
 Tolerance mm : + - 0.05

Aneroid pressure hPa : 350
 Rated speed rpm : 400
 Del. quantity cm³/1000 strokes : 150.0
 Tolerance cm³/1000 strokes : + - 1.5
 Check tolerance cm³/1000S. : + - 4.5

Aneroid pressure hPa : -
 Rated speed rpm : 500
 Del. quantity cm³/1000 strokes : 130.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Spread Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 Del. quantity cm³/1000 strokes : 220.0
 Tolerance cm³/1000 strokes : + - 10.0
 Check tolerance cm³/1000S. : + - 14.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.20
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000s. : + - 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.11.93
Test oil : ISO 4113

Combination No. : 0 402 646 957X

Injection pump
Pump designation : PE6P120A320LS7836
: -10
EP type number : 0 412 626 854

Governor
Governor design. : RQV300...1050PA797
: -32
Governor no. : 0 421 813 957

Cust. part No. : 0200741002

Customer-spec. information

Customer : MB-NFZ
Motor : OM401 LA
Power KW : 180.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5

Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.55
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 6-3-5-2-4
: 1

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.70
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 183.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.60
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1100

Rack travel in mm : 15.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure

hPa : 1400

Del. quantity
cm³/1000 strokes : 183.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 120.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 11.70

Rated speed rpm : 1095
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1180
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 82.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.40

Testing:

Rated speed rpm : 300
rack travel mm : 5.60
Tolerance mm : + 0.10

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.70

Tolerance mm : + 0.05

Rated speed rpm : 800
rack travel mm : 12.70
Tolerance mm : + - 0.05

Rated speed rpm : 600
rack travel mm : 12.70
Tolerance mm : + - 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1400
rack travel mm : 12.70
Tolerance mm : + - 0.05

Rated speed rpm : 400
Pressure hPa : -
rack travel mm : 10.75
Tolerance mm : + - 0.15

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.75
Tolerance mm : + - 0.15

Rated speed rpm : 400

Pressure hPa : 200
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check speed 1/min : > 80
Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1400
Rated speed rpm : 800
Del. quantity cm³/1000 strokes : 188.0
Tolerance cm³/1000 strokes : + - 2.0

Check tolerance cm³/1000s. : + - 5.0
Spread
Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000s. : 12.0

rack travel mm : 12.70
Tolerance mm : + - 0.05

Aneroid pressure hPa : 200
Rated speed rpm : 400
Del. quantity cm³/1000 strokes : 119.0
Tolerance cm³/1000 strokes : + - 1.5
Check tolerance cm³/1000s. : + - 4.5

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 133.0
Tolerance cm³/1000 strokes : + - 1.0
Check tolerance cm³/1000s. : + - 4.0
Spread
Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000s. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity cm³/1000 strokes : 210.0
Tolerance cm³/1000 strokes : + - 10.0
Check tolerance cm³/1000s. : + - 14.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.60
Tolerance mm : + - 0.10

Vel. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.11.93
Test oil : ISO 4113

Combination No. : 0 402 646 958X

Injection pump
Pump designation : PE6P120A320LS7836
: -10
EP type number : 0 412 626 854

Governor
Governor design. : RQV300...950PA797
: -33
Governor no. : 0 421 813 958

Cust. part No. : 0200742102

Customer-spec. information

Customer : MB-NFZ
Motor : OM401 LA
Power KW : 180.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5

Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 12.70
Tolerance mm : ± 0.05

Det. quantity
cm³/1000 strokes : 188.5

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.60
Tolerance mm : + - 0.10

Det. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000S. : + - 6.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1020

Rack travel in mm : 16.50
Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
Aneroid pressure

hPa : 1400

Det. quantity
cm³/1000 strokes : 188.5

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 11.70
Rated speed rpm : 995
Tolerance 1/min : + - 5

rack travel mm : 4.00
Rated speed rpm : 1080
Tolerance 1/min : + - 15

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 82.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.40

Testing:

Rated speed rpm : 300
rack travel mm : 5.60
Tolerance mm : + - 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 12.70

Tolerance mm : + - 0.05

Rated speed rpm : 800
rack travel mm : 12.70
Tolerance mm : + - 0.05

Rated speed rpm : 600
rack travel mm : 12.70
Tolerance mm : + - 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1400
rack travel mm : 12.70
Tolerance mm : + - 0.05

Rated speed rpm : 400
Pressure hPa : -
rack travel mm : 10.75
Tolerance mm : + - 0.15

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.75
Tolerance mm : + - 0.15

Rated speed rpm : 400

Pressure hPa : 200
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check speed 1/min : > 80
Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1400
Rated speed rpm : 800
Del. quantity cm³/1000 strokes : 188.0
Tolerance cm³/1000 strokes : + - 2.0

Check tolerance cm³/1000S. : + - 5.0
Spred
Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

rack travel mm : 12.70
Tolerance mm : + - 0.05

Aneroid pressure hPa : 200
Rated speed rpm : 400
Del. quantity cm³/1000 strokes : 119.0
Tolerance cm³/1000 strokes : + - 1.5
Check tolerance cm³/1000S. : + - 4.5

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 133.0
Tolerance cm³/1000 strokes : + - 1.0
Check tolerance cm³/1000S. : + - 4.0
Spred
Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity cm³/1000 strokes : 210.0
Tolerance cm³/1000 strokes : + - 10.0
Check tolerance cm³/1000S. : + - 14.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.60
Tolerance mm : + - 0.10

Det. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.03.94
Test oil : ISO 4113

Combination No. : 0 402 646 984

Injection pump
Pump designation : PE6P120A320RS7248
: -10
EP type number : 0 412 626 900

Governor
Governor design. : RQ275/1150PA987
Governor no. : 0 421 801 578

Cust. part No. : 1248030

Customer-spec. information

Customer : DAF
Motor : RS 222 L
Power KW : 222.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 12.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.25
Tolerance mm : + 0.05

Rack travel in mm : 4.70
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 16.0

Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0
 Speed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1211
 guide sleeve travel mm : 6.48
 Tolerance mm : + 0.10

Rated speed rpm : 275
 guide sleeve travel mm : 1.78
 Tolerance mm : + 0.10

Rated speed rpm : 1150
 guide sleeve travel mm : 6.00
 Tolerance mm : + 0.10

Rated speed rpm : 350
 guide sleeve travel mm : 4.05
 Tolerance mm : + 0.10

Rated speed rpm : 450
 guide sleeve travel mm : 6.00
 Tolerance mm : + 0.10

Rated speed rpm : 1370
 guide sleeve travel mm : 11.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever position degree : - 1
 Rated speed rpm : 550

Rack travel in mm : 15.80
 Tolerance mm : + 0.60

CONTROL LEVER

control lever position degree : 104.0
 tolerance degree : + 4.0

RATED SPEED
 rack travel mm : 11.20
 Rated speed rpm : 1208
 Tolerance 1/min : + 8

rack travel mm : 4.00
 Rated speed rpm : 1290
 Tolerance 1/min : + 15

rack travel mm : 0.70
 Tolerance mm : + 0.70
 Rated speed rpm : 1450

LOW IDLE

control lever position degree : 74.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : > 7.00

Testing:

Rated speed rpm : 275
 rack travel mm : 4.70
 Tolerance mm : + 0.10

rack travel mm : 2.00
 Rated speed rpm : 340
 Tolerance 1/min : + 20

TORQUE CONTROL

Rated speed rpm : 1000
 rack travel mm : 12.25
 Tolerance mm : + 0.05

Rated speed rpm : 1150
 rack travel mm : 12.25
 Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 12.25
Tolerance mm : \pm 0.05

Rated speed rpm : 600
Pressure hPa : -
rack travel mm : 9.40
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 9.40
Tolerance mm : \pm 0.10

Rated speed rpm : 600

Pressure hPa : 240
rack travel mm : 10.40
Tolerance mm : \pm 0.10

Pressure hPa : 420
rack travel mm : 11.65
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 122.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

LOW IDLE

Rack travel in mm : 4.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.07.94
Test oil : ISO 4113

Combination No. : 0 402 646 995

Injection pump
Pump designation : PE6P120A720RS7188
: -10
EP type number : 0 412 626 924

Governor
Governor design. : RQV200...950PA725
: -10
Governor no. : 0 421 814 002

Cust. part No. : 1338075

Customer-spec. information

Customer : SCANIA
Motor : DSC 11 33

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30

Check
tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.30
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 250

Rack travel in mm : 4.70
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 16.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1045
 guide sleeve
 travel mm : 8.50
 Tolerance mm : + 0.10

Rated speed rpm : 225
 guide sleeve
 travel mm : 1.40
 Tolerance mm : + 0.20

Rated speed rpm : 650
 guide sleeve
 travel mm : 4.80
 Tolerance mm : + 0.30

Rated speed rpm : 350
 guide sleeve
 travel mm : 2.70
 Tolerance mm : + 0.30

Rated speed rpm : 1125
 guide sleeve
 travel mm : 9.50
 Tolerance mm : + 0.20

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1140

Rack travel in mm : 9.50
 Tolerance mm : + 2.50

CONTROL LEVER

control lever
 position degree : 60.0
 tolerance degree : + 4.0

control lever
 position degree : 114.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.40
 Rated speed rpm : 995
 Tolerance 1/min : + 5
 Check speed 1/min : + 10

rack travel mm : 4.00
 Rated speed rpm : 1125
 Tolerance 1/min : + 15
 Check speed 1/min : + 20

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1250

LOW IDLE

control lever
 position degree : 64.0
 tolerance degree : + 4.0

control lever
 position degree : 10.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : > 6.00

Testing:

Rated speed rpm : 250
 rack travel mm : 4.70
 Tolerance mm : + 0.10

Rated speed rpm : 300
 Tolerance 1/min : + 99

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 13.45
Tolerance mm : + - 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.45
Tolerance mm : + - 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.40
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 270
rack travel mm : 11.00
Tolerance mm : + - 0.15

Pressure hPa : 440
rack travel mm : 12.05
Tolerance mm : + - 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 222.0
Tolerance
cm³/1000 strokes : + - 4.0
Check tolerance
cm³/1000S. : + - 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 153.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.40
Tolerance mm : + - 0.20
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : + - 20.0
Check tolerance
cm³/1000S. : + - 24.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 4.70
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.04.96
Test oil : ISO 4113

Combination No. : 0 402 648 797

Injection pump
Pump designation : PE8P120A320LS7873
EP type number : 0 412 628 880

Governor
Governor design. : RQ750PA1231
Governor no. : 0 421 801 791

Cust. part No. : 04222112KY0165-17

Customer-spec. information

Customer : KHD
Motor : BF8M1015/C
Power KW : 318.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test cil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.05
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 8- 7- 2- 6
: - 5- 4- 3

Phasing : 0-45-90-135-180
: -225-270-315

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.30
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 365.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 768
guide sleeve
travel mm : 6.28
Tolerance mm : + 0.15

Rated speed rpm : 610
guide sleeve
travel mm : 0.52
Tolerance mm : + 0.25

Rated speed rpm : 900
guide sleeve
travel mm : 14.60
Tolerance mm : + 0.15

Rated speed rpm : 866
guide sleeve
travel mm : 12.00
Tolerance mm : + 0.25

Rated speed rpm : 930
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure hPa : -

Del. quantity
cm³/1000 strokes : 365.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 109.0

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 900

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 12.30

Rated speed rpm : 780
Tolerance 1/min : + 4
rack travel mm : 5.50

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 900

Rated speed rpm : 751
rack travel mm : 12.30

Rated speed rpm : 781
Tolerance 1/min : + 4
rack travel mm : 5.50

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 900

Rated speed rpm : 752
rack travel mm : 12.30

Rated speed rpm : 782

Tolerance 1/min : + 4
rack travel mm : 5.50

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 900

Rated speed rpm : 753
rack travel mm : 12.30

Rated speed rpm : 783
Tolerance 1/min : + 4
rack travel mm : 5.50

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 900

Rated speed rpm : 754
rack travel mm : 12.30

Rated speed rpm : 784
Tolerance 1/min : + 4
rack travel mm : 5.50

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 900

Rated speed rpm : 755
rack travel mm : 12.30

Rated speed rpm : 785
Tolerance 1/min : + 4
rack travel mm : 5.50

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 900

TORQUE CONTROL
Rated speed rpm : 700
rack travel mm : 13.30
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 560

Check
speed 1/min : > 80

Check
speed 1/min : < 580

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : + 0.75
Del. quantity
cm³/1000 strokes : 205.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 24.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.12.93
Test oil : ISO 4113

Combination No. : 0 402 648 893X

Injection pump
Pump designation : PE8P120A320LS7835
: -10
EP type number : 0 412 628 853

Governor
Governor design. : RQ300/950PA971-2
Governor no. : 0 421 801 548

Cust. part No. : 0200740602

Customer-spec. information

Customer : MB-NFZ
Motor : OM402 LA
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.55
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.30
Check tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 14.70
Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 231.0
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 9.0
 Rated speed rpm : 300
 Rack travel in mm : 6.20
 Tolerance mm : + - 0.10
 Del. quantity
 cm³/1000 strokes : 19.0
 Tolerance
 cm³/1000 strokes : + - 3.0
 Check tolerance
 cm³/1000S. : + - 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1014
 guide sleeve
 travel mm : 6.87
 Tolerance mm : + - 0.10
 Rated speed rpm : 300
 guide sleeve
 travel mm : 2.13
 Tolerance mm : + - 0.10
 Rated speed rpm : 950
 guide sleeve
 travel mm : 6.55
 Tolerance mm : + - 0.10
 Rated speed rpm : 750
 guide sleeve
 travel mm : 6.14

Tolerance mm : + - 0.10
 Rated speed rpm : 404
 guide sleeve
 travel mm : 4.60
 Tolerance mm : + - 0.10
 Rated speed rpm : 500
 guide sleeve
 travel mm : 6.00
 Tolerance mm : + - 0.10
 Rated speed rpm : 1160
 guide sleeve
 travel mm : 11.50
 Tolerance mm : + - 0.50
 Rated speed rpm : 853
 guide sleeve
 travel mm : 6.41
 Tolerance mm : + - 0.10

GUIDE SLEEVE POSITION

control lever
 position degree : 109
 Rated speed rpm : 600
 Rack travel in mm : 20.00
 Tolerance mm : + - 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 231.0
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 98.0
 tolerance degree : + - 4.0

RATED SPEED

rack travel mm	:	13.10
Rated speed rpm	:	998
Tolerance 1/min	:	+ 8
rack travel mm	:	4.00
Rated speed rpm	:	1085
Tolerance 1/min	:	+ 15
rack travel mm	:	0.70
Tolerance mm	:	+ 0.70
Rated speed rpm	:	1200

LOW IDLE

control lever position degree	:	74.0
tolerance degree	:	+ 4.0

Setting point w/out bumper spring

Rated speed rpm	:	200
CRT mm min.	:	> 7.50

Testing:

Rated speed rpm	:	300
rack travel mm	:	6.20
Tolerance mm	:	+ 0.10
rack travel mm	:	2.00
Rated speed rpm	:	400
Tolerance 1/min	:	+ 20

TORQUE CONTROL

Dimension a mm	:	0.50
Rated speed rpm	:	750
rack travel mm	:	14.70
Tolerance mm	:	+ 0.05
Rated speed rpm	:	950
rack travel mm	:	14.10
Tolerance mm	:	+ 0.10
Rated speed rpm	:	800
rack travel mm	:	14.70
Tolerance mm	:	+ 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm	:	400
Pressure hPa	:	1200
rack travel mm	:	14.70
Tolerance mm	:	+ 0.05
Rated speed rpm	:	400
Pressure hPa	:	-
rack travel mm	:	10.45
Tolerance mm	:	+ - 0.15

MEASUREMENT

Pressure hPa	:	-
Rated speed rpm	:	500
rack travel mm	:	10.45
Tolerance mm	:	+ - 0.15
Rated speed rpm	:	400
Pressure hPa	:	250
rack travel mm	:	11.05
Tolerance mm	:	+ - 0.10
Pressure hPa	:	550
Tolerance mm	:	+ - 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa	:	1200
Rated speed rpm	:	950
Del. quantity cm ³ /1000 strokes	:	217.5
Tolerance cm ³ /1000 strokes	:	+ - 2.0
Check tolerance cm ³ /1000S.	:	+ - 5.0
Spread		
Tolerance cm ³ /1000 strokes	:	8.0
Check tolerance cm ³ /1000S.	:	12.0

rack travel mm	:	14.70
Tolerance mm	:	+ - 0.10

Aneroid pressure hPa	:	550
Rated speed rpm	:	400
Del. quantity cm ³ /1000 strokes	:	190.0
Tolerance cm ³ /1000 strokes	:	+ - 1.5

Check tolerance
cm³/1000S. : + 4.5

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 55.0
Tolerance
cm³/1000 strokes : + 15.0
Check tolerance
cm³/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.20
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.09.93
Test oil : ISO 4113

Combination No. : 0 402 648 911

Injection pump
Pump designation : PE8P120A320LS7839
: -10
EP type number : 0 412 628 855

Governor
Governor design. : RQV300...1050PA797
: -27
Governor no. : 0 421 813 916

Cust. part No. : 0200749302

Customer-spec. information

Customer : MB-NFZ
Motor : OM442 LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5

Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.30
Check tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 8

CRT ZERO POSITION

Rack travel in mm : 15.20
Tolerance mm : + 0.10

BASIC SETTING

Del. quantity
cm³/1000 strokes : 266.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.30
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1130

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550

Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 266.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 122.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 15.30
Rated speed rpm : 1095
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1190
Tolerance 1/min : + 15

rack travel mm : 0.75
Tolerance mm : + 0.75
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 80.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 6.80

Testing:

Rated speed rpm : 300
rack travel mm : 6.30
Tolerance mm : + 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 16.30
Tolerance mm : + - 0.10

Rated speed rpm : 800
rack travel mm : 16.50
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST**SETTING**

Rated speed rpm : 550
Pressure hPa : 900

2-stage LDA setting

Rated speed rpm : 700
Pressure hPa : 1100
rack travel mm : 0.20

MEASUREMENT

Rated speed rpm : 550

Pressure hPa : 550
rack travel mm : -2.25
Tolerance mm : + - 0.05

Pressure hPa : 1300
rack travel mm : 0.55
Tolerance mm : + - 0.05

Pressure hPa : 250
rack travel mm : -5.00
Tolerance mm : + - 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check speed 1/min : > 80
Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 272.5
Tolerance
cm³/1000 strokes : + - 1.5
Check tolerance
cm³/1000S. : + - 4.5
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 2000
Rated speed rpm : 800
rack travel mm : 16.50
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 285.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1300
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 273.0
Tolerance
cm³/1000 strokes : + - 1.5
Check tolerance
cm³/1000S. : + - 4.5

Aneroid pressure
hPa : 550
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 204.5
Tolerance
cm³/1000 strokes : + - 1.5
Check tolerance
cm³/1000S. : + - 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 133.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 285.0
Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000S. : + - 14.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.30
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 06.09.93
Test oil : ISO 4113

Combination No. : 0 402 648 915X

Injection pump
Pump designation : PE8P120A320LS7835
: -10
EP type number : 0 412 628 853

Governor
Governor design. : RQ300/1050PA993-1
Governor no. : 0 421 801 582

Cust. part No. : 0200747202

Customer-spec. information

Customer : MB-NFZ
Motor : OM402 LA
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Del. quantity
cm³/1000 strokes : 231.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 4.0
 Spred
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 9.0

 Rated speed rpm : 300
 Rack travel in mm : 6.20
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 19.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0
 Spred
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : 109
 Rated speed rpm : 600
 Rack travel in mm : 20.00
 Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 231.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spred
 Tolerance
 cm³/1000 strokes : 6.0

Check tolerance
 cm³/1000S. : 9.0

 CONTROL LEVER
 control lever
 position degree : 99.0
 tolerance degree : + 4.0
 RATED SPEED
 rack travel mm : 13.00
 Rated speed rpm : 1098
 Tolerance 1/min : + 8
 rack travel mm : 4.00
 Rated speed rpm : 1185
 Tolerance 1/min : + 15
 rack travel mm : 0.70
 Tolerance mm : + 0.70
 Rated speed rpm : 1300

LOW IDLE

control lever
 position degree : 74.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
 CRT mm min. : > 7.80

Testing:

Rated speed rpm : 300
 rack travel mm : 6.20
 Tolerance mm : + 0.10
 rack travel mm : 2.00
 Rated speed rpm : 400
 Tolerance 1/min : + 20

TORQUE CONTROL

Dimension a mm : 0.50
 Rated speed rpm : 1050
 rack travel mm : 14.00
 Tolerance mm : + 0.10
 Rated speed rpm : 800

rack travel mm : 14.70
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 750
Pressure hPa : 1200
rack travel mm : 14.70
Tolerance mm : + - 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.25
Tolerance mm : + - 0.15

MEASUREMENT

Rated speed rpm : 750
Pressure hPa : 250
rack travel mm : 11.25
Tolerance mm : + - 0.10

Pressure hPa : 550
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check speed 1/min : > 80
Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 215.5
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 14.70
Tolerance mm : + - 0.10

Aneroid pressure
hPa : 550
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : + - 1.5
Check tolerance
cm³/1000S. : + - 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 215.0
Tolerance
cm³/1000 strokes : + - 15.0
Check tolerance
cm³/1000S. : + - 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 6.20
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread

Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BUSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.09.93
Test oil : ISO 4113

Combination No. : 0 402 648 918X

Injection pump
Pump designation : PE8P120A320LS7838
: -10
EP type number : 0 412 628 854

Governor
Governor design. : RQ300/1050PA993-4
Governor no. : 0 421 801 602

Cust. part No. : 021074102

Customer-spec. information

Customer : MB-NFZ
Motor : OM442 LA
Power KW : 320.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.30
Check tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Del. quantity
cm³/1000 strokes : 238.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spred

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.50

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spred

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : 109

Rated speed rpm : 1020

Rack travel in mm : 20.00

Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600

Aneroid pressure

hPa : 1200

Del. quantity
cm³/1000 strokes : 238.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spred

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 98.0

Tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.30

Rated speed rpm : 1098

Tolerance 1/min : + 8

rack travel mm : 4.00

Rated speed rpm : 1180

Tolerance 1/min : + 15

rack travel mm : 0.75

Tolerance mm : + 0.75

Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 74.0

Tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.80

Testing:

Rated speed rpm : 300

rack travel mm : 6.50

Tolerance mm : + 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1050

rack travel mm : 14.30

Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1200
rack travel mm : 14.45
Tolerance mm : + - 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.05
Tolerance mm : + - 0.15

MEASUREMENT

Rated speed rpm : 600
Pressure hPa : 250
rack travel mm : 9.90
Tolerance mm : + - 0.10

Pressure hPa : 550
rack travel mm : 12.60
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check speed 1/min : > 80
Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 224.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 550
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 204.5

Tolerance
cm³/1000 strokes : + - 1.5
Check tolerance
cm³/1000S. : + - 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 133.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 2.5
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 6.50
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.08.94
Test oil : ISO 4113

Combination No. : 0 402 648 921

Injection pump
Pump designation : PE8P120A320LS7839
: -10
EP type number : 0 412 628 855

Governor
Governor design. : RQ300/950PA993-8
Governor no. : 0 421 801 618

Cust. part No. : 0210748002

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + - 1.0

Prestroke mm : 5.05
Tolerance mm : + - 0.05
Check tolerance mm : + - 0.10

Rack travel in mm : 20.50
Tolerance mm : + - 0.50

Firing order : 8-7-2-6-3
: - 5-4-1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.30
Check tolerance °NW : + - 0.75

Start of delivery mark

Barrel no. : 8

CRT ZERO POSITION

Rack travel in mm : 15.20
Tolerance mm : + - 0.10

BASIC SETTING

Del. quantity
cm³/1000 strokes : 266.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.30
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000S. : + - 6.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : + - 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550

Aneroid pressure

hPa : 900

Del. quantity
cm³/1000 strokes : 266.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 104.0
tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 15.50
Rated speed rpm : 998
Tolerance 1/min : + - 8

rack travel mm : 4.00
Rated speed rpm : 1090
Tolerance 1/min : + - 15

rack travel mm : 0.75
Tolerance mm : + - 0.75
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.60

Testing:

Rated speed rpm : 300
rack travel mm : 6.30
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 400
Tolerance 1/min : + - 20

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 16.50
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 900

2-stage LDA setting

Rated speed rpm : 700
Pressure hPa : 1100
rack travel mm : 0.20

MEASUREMENT

Rated speed rpm : 550
Pressure hPa : 550
rack travel mm : -2.25
Tolerance mm : + 0.05

Pressure hPa : 1300
rack travel mm : 0.55
Tolerance mm : + 0.05

Pressure hPa : 250
rack travel mm : -5.00
Tolerance mm : + 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check speed 1/min : > 80
Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 2000
Rated speed rpm : 950
Del. quantity cm3/1000 strokes : 282.5

Tolerance cm3/1000 strokes : + 1.5
Check tolerance cm3/1000S. : + 4.5
Spread
Tolerance cm3/1000 strokes : 8.0
Check tolerance cm3/1000S. : 12.0

Aneroid pressure hPa : 1300
Rated speed rpm : 700
Del. quantity cm3/1000 strokes : 273.0
Tolerance cm3/1000 strokes : + 1.5
Check tolerance cm3/1000S. : + 4.5

Aneroid pressure hPa : 550
Rated speed rpm : 400
Del. quantity cm3/1000 strokes : 204.5
Tolerance cm3/1000 strokes : + 1.5
Check tolerance cm3/1000S. : + 4.5

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm3/1000 strokes : 133.0
Tolerance cm3/1000 strokes : + 1.0
Check tolerance cm3/1000S. : + 4.0
Spread
Tolerance cm3/1000 strokes : 8.0
Check tolerance cm3/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity cm3/1000 strokes : 270.0
Tolerance cm3/1000 strokes : + 10.0
Check tolerance cm3/1000S. : + 14.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 6.30

Tolerance mm : + - 0.10

Del. quantity

cm³/1000 strokes : 19.0

Tolerance

cm³/1000 strokes : + - 3.0

Check tolerance

cm³/1000S. : + - 6.0

Spread

Tolerance

cm³/1000 strokes : 6.0

Check tolerance

cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.11.93
Test oil : ISO 4113

Combination No. : 0 402 648 932B

Injection pump
Pump designation : PE8P120A320LS7849
EP type number : 0 412 628 864

Governor
Governor design. : RQV300...1050PA1034
Governor no. : 0 421 813 993

Cust. part No. : 9274608

Customer-spec. information

Customer : LIEBHERR
Motor : D 9308 TI
Power KW : 360.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 8- 7- 2- 6
: - 3- 5- 4

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 14.55
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 264.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 4.0

Spread

Tolerance
 cm³/1000 strokes : 5.0

 Check tolerance
 cm³/1000S. : 9.0

Rated speed rpm : 350
 Del. quantity
 cm³/1000 strokes : 24.5
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1118
 guide sleeve
 travel mm : 10.51
 Tolerance mm : + 0.25

Rated speed rpm : 350
 guide sleeve
 travel mm : 1.94
 Tolerance mm : + 0.25

Rated speed rpm : 783
 guide sleeve
 travel mm : 6.60
 Tolerance mm : + 0.25

Rated speed rpm : 356
 guide sleeve
 travel mm : 1.95
 Tolerance mm : + 0.25

Rated speed rpm : 406
 guide sleeve
 travel mm : 2.67
 Tolerance mm : + 0.25

Rated speed rpm : 490
 guide sleeve
 travel mm : 3.59
 Tolerance mm : + 0.25

Rated speed rpm : 1320

guide sleeve
 travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1140

Rack travel in mm : 13.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
 Aneroid pressure
 hPa : 1500
 Del. quantity
 cm³/1000 strokes : 264.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 107.0
 tolerance degree : + 4.0

RATED SPEED
 rack travel mm : 13.50
 Rated speed rpm : 945
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1085
 Tolerance 1/min : + 15

rack travel mm : 0.70
 Tolerance mm : + 0.70
 Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 81.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 300

CRT mm min. : > 8.50

Testing:

rack travel mm : 2.00

Rated speed rpm : 460

Tolerance 1/min : + - 30

Rated speed rpm : 385

TORQUE CONTROL

Rated speed rpm : 900

rack travel mm : 14.55

Tolerance mm : + - 0.05

Rated speed rpm : 500

rack travel mm : 14.55

Tolerance mm : + - 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 1400
rack travel mm : 14.55
Tolerance mm : + - 0.05

Rated speed rpm : 550
Pressure hPa : -
rack travel mm : 11.75
Tolerance mm : + - 0.10

MEASUREMENT

Rated speed rpm : 550

Pressure hPa : 710
rack travel mm : 12.55
Tolerance mm : + - 0.10

Pressure hPa : 860
rack travel mm : 13.75
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 320

Check
speed 1/min : > 80
Check
speed 1/min : < 340

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : -
Rated speed rpm : 550
Del. quantity cm3/1000 strokes : 220.5
Tolerance cm3/1000 strokes : + - 1.0
Check tolerance cm3/1000S. : + - 4.0
Spread
Tolerance cm3/1000 strokes : 8.0
Check tolerance cm3/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + - 0.50
Del. quantity cm3/1000 strokes : 160.0
Tolerance cm3/1000 strokes : + - 10.0
Check tolerance cm3/1000S. : + - 14.0

LOW IDLE

Rated speed rpm : 350
Del. quantity cm3/1000 strokes : 24.5
Tolerance cm3/1000 strokes : + - 3.0
Check tolerance cm3/1000S. : + - 6.0
Spread
Tolerance cm3/1000 strokes : 6.0
Check tolerance cm3/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 08.11.93
Test oil : ISO 4113

Combination No. : 0 402 648 939

Injection pump
Pump designation : PE8P120A320LS7863-1
EP type number : 0 412 628 876

Governor
Governor design. : RQV300...1050PA797
: -37
Governor no. : 0 421 814 003

Cust. part No. : 0220743302

Customer-spec. information

Customer : MB-NFZ
Motor : OM442 LA
Power KW : 405.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.75
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50
Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.30
Check
tolerance °N : + 0.75

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.50
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 282.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.50
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1130

Rack travel in mm : 13.40
Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1300
Del. quantity
cm³/1000 strokes : 282.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spred

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 121.0
tolerance degree : + - 4.0

RATED SPEED
rack travel mm : 13.50
Rated speed rpm : 1098
Tolerance 1/min : + - 8

rack travel mm : 4.00
Rated speed rpm : 1185
Tolerance 1/min : + - 15

rack travel mm : 0.75
Tolerance mm : + - 0.75
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 84.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 6.80

Testing:

Rated speed rpm : 300
rack travel mm : 5.50
Tolerance mm : + - 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 14.50
Tolerance mm : + - 0.05

Rated speed rpm : 600
rack travel mm : 14.50
Tolerance mm : + - 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1300
rack travel mm : 14.50
Tolerance mm : + - 0.05

Rated speed rpm : 400
Pressure hPa : -
rack travel mm : 7.85
Tolerance mm : + - 0.15

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 7.85
Tolerance mm : + - 0.15

Rated speed rpm : 400

Pressure hPa : 550
Tolerance mm : + - 0.05

Pressure hPa : 1000
rack travel mm : 13.55
Tolerance mm : + - 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 296.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 550
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 204.5
Tolerance
cm³/1000 strokes : + - 1.5
Check tolerance
cm³/1000S. : + - 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 280.0
Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000S. : + - 14.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.50
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.09.93
Test oil : ISO 4113

Combination No. : 0 402 648 956

Injection pump
Pump designation : PE8P120A320LS7863
EP type number : 0 412 628 874

Governor
Governor design. : RQV300...1050PA1050
: -1K
Governor no. : 0 421 815 339

Cust. part No. : 0240740102

Customer-spec. information

Customer : MB-NFZ
Motor : OM442 LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 105
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 14.50
Tolerance mm : + 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315

Tolerance : + 0.30
Check tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.05
Tolerance mm : + 0.05

Del. quantity cm³/1000 strokes : 258.0
 Tolerance cm³/1000 strokes : + 1.0
 Check tolerance cm³/1000S. : + 4.0
 Spread
 Tolerance cm³/1000 strokes : 6.0
 Check tolerance cm³/1000S. : 9.0
 Rated speed rpm : 300
 Rack travel in mm : 5.80
 Tolerance mm : + 0.10
 Del. quantity cm³/1000 strokes : 19.0
 Tolerance cm³/1000 strokes : + 3.0
 Check tolerance cm³/1000S. : + 6.0
 Spread
 Tolerance cm³/1000 strokes : 6.0
 Check tolerance cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1106
 guide sleeve travel mm : 8.96
 Tolerance mm : + 0.10
 Rated speed rpm : 300
 guide sleeve travel mm : 1.85
 Tolerance mm : + 0.10
 Rated speed rpm : 850
 guide sleeve travel mm : 5.60
 Tolerance mm : + 0.25
 Rated speed rpm : 347

guide sleeve travel mm : 2.72
 Tolerance mm : + 0.25
 Rated speed rpm : 397
 guide sleeve travel mm : 3.26
 Tolerance mm : + 0.25
 Rated speed rpm : 530
 guide sleeve travel mm : 3.77
 Tolerance mm : + 0.25
 Rated speed rpm : 1219
 guide sleeve travel mm : 12.00
 Tolerance mm : + 0.25
 Rated speed rpm : 1300
 guide sleeve travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever position degree : - 1
 Rated speed rpm : 1180
 Rack travel in mm : 13.00
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
 Aneroid pressure hPa : -
 Del. quantity cm³/1000 strokes : 258.0
 Tolerance cm³/1000 strokes : + 1.0
 Check tolerance cm³/1000S. : + 4.0
 Spread
 Tolerance cm³/1000 strokes : 6.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 119.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm	:	13.00
Rated speed rpm	:	1095
Tolerance 1/min	:	+ - 5
rack travel mm	:	4.00
Rated speed rpm	:	1170
Tolerance 1/min	:	+ - 15
rack travel mm	:	0.75
Tolerance mm	:	+ - 0.75
Rated speed rpm	:	1300

LOW IDLE

control lever position degree	:	75.0
tolerance degree	:	+ - 4.0

Setting point w/out bumper spring

Rated speed rpm	:	200
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CRT mm min.	:	> 7.70
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Testing:

Rated speed rpm	:	300
rack travel mm	:	5.80
Tolerance mm	:	+ - 0.10

Rated speed rpm	:	400
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TORQUE CONTROL

Rated speed rpm	:	1050
rack travel mm	:	14.05
Tolerance mm	:	+ - 0.05

Rated speed rpm	:	950
rack travel mm	:	14.45
Tolerance mm	:	+ - 0.10

Rated speed rpm	:	850
rack travel mm	:	14.60
Tolerance mm	:	+ - 0.10

Rated speed rpm	:	750
rack travel mm	:	14.20
Tolerance mm	:	+ - 0.05

Rated speed rpm	:	700
rack travel mm	:	13.90
Tolerance mm	:	+ - 0.10

Rated speed rpm	:	650
rack travel mm	:	13.70
Tolerance mm	:	+ - 0.10
Rated speed rpm	:	550
rack travel mm	:	13.50
Tolerance mm	:	+ - 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm	:	850
Pressure hPa	:	1200
rack travel mm	:	14.70
Tolerance mm	:	+ - 0.10

Rated speed rpm	:	500
Pressure hPa	:	-
rack travel mm	:	7.95
Tolerance mm	:	+ - 0.15

MEASUREMENT

Rated speed rpm	:	850
Pressure hPa	:	150
rack travel mm	:	8.90
Tolerance mm	:	+ - 0.10

Pressure hPa	:	550
rack travel mm	:	12.40
Tolerance mm	:	+ - 0.05

Start interlock

Rated speed rpm	:	> 100
Rated speed rpm	:	< 220

Check speed 1/min	:	> 80
Check speed 1/min	:	< 240

FUEL DELIVERY CHARACTERISTICS

rack travel mm	:	14.60
Tolerance mm	:	+ - 0.10

Aneroid pressure hPa	:	-
Rated speed rpm	:	750

Del. quantity
cm³/1000 strokes : 262.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 256.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 204.5
Tolerance
cm³/1000 strokes : + - 1.5
Check tolerance
cm³/1000S. : + - 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 133.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 11.60
Tolerance mm : + - 0.40
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000S. : + - 14.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.80
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.12.94
Test oil : ISO 4113

Combination No. : 0 402 648 966

Injection pump
Pump designation : PE8P120A720LS7189
: -10
EP type number : 0 412 628 893

Governor
Governor design. : RGV350...1050PA795
: -19
Governor no. : 0 421 814 057

Cust. part No. : 1340523

Customer-spec. information

Customer : SCANIA
Motor : DSI1458M

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180
: -225-270-315

Tolerance : + 0.30
Check tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 350

Rack travel in mm : 4.60
 Tolerance mm : + - 0.10
 Del. quantity cm³/1000 strokes : 21.0
 Tolerance cm³/1000 strokes : + - 3.0
 Check tolerance cm³/1000S. : + - 6.0
 Spread
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1108
 guide sleeve travel mm : 8.05
 Tolerance mm : + - 0.15

Rated speed rpm : 350
 guide sleeve travel mm : 1.44
 Tolerance mm : + - 0.20

Rated speed rpm : 781
 guide sleeve travel mm : 5.24
 Tolerance mm : + - 0.25

Rated speed rpm : 411
 guide sleeve travel mm : 2.06
 Tolerance mm : + - 0.25

Rated speed rpm : 461
 guide sleeve travel mm : 2.64
 Tolerance mm : + - 0.25

Rated speed rpm : 520
 guide sleeve travel mm : 3.19
 Tolerance mm : + - 0.25

Rated speed rpm : 1390
 guide sleeve travel mm : 11.50
 Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

control lever position degree : - 1
 Rated speed rpm : 1210
 Rack travel in mm : 12.60
 Tolerance mm : + - 1.30

CONTROL LEVER

control lever position degree : 48.0
 tolerance degree : + - 4.0

control lever position degree : 107.0
 tolerance degree : + - 4.0

RATED SPEED
 rack travel mm : 12.60
 Rated speed rpm : 1095
 Tolerance 1/min : + - 5
 Check speed 1/min : + - 10

rack travel mm : 4.00
 Rated speed rpm : 1220
 Tolerance 1/min : + - 15
 Check speed 1/min : + - 20

rack travel mm : 0.50
 Tolerance mm : + - 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever position degree : 73.0
 tolerance degree : + - 4.0

control lever position degree : 15.0
 tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : > 7.50

Testing:

Rated speed rpm : 350

rack travel mm : 4.60
Tolerance mm : + 0.10

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 13.65
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.65
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.00
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 430
rack travel mm : 10.90
Tolerance mm : + 0.20

Pressure hPa : 750
rack travel mm : 12.65
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : + 4.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 144.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.00
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 24.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 4.60
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.03.98
Test oil : ISO 4113

Combination No. : 0 402 648 974

Injection pump
Pump designation : PE8P120A320LS7915
EP type number : 0 412 628 929

Governor
Governor design. : RQ300/1150PA1374
Governor no. : 0 421 801 833

Cust. part No. :

Customer-spec. information

Customer : DHI
Motor : DV15TC
Power KW : 272.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.20
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 16.00
Tolerance mm : + 1.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.35
Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 220.5
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 7.0
 Check tolerance
 cm³/1000S. : 10.0
 Rated speed rpm : 300
 Rack travel in mm : 6.00
 Tolerance mm : + - 0.10
 Del. quantity
 cm³/1000 strokes : 18.0
 Tolerance
 cm³/1000 strokes : + - 3.0
 Check tolerance
 cm³/1000S. : + - 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1208
 guide sleeve
 travel mm : 6.35
 Tolerance mm : + - 0.15
 Rated speed rpm : 300
 guide sleeve
 travel mm : 1.20
 Tolerance mm : + - 0.20
 Rated speed rpm : 1150
 guide sleeve
 travel mm : 6.00
 Tolerance mm : + - 0.10
 Rated speed rpm : 457
 guide sleeve
 travel mm : 3.70

Tolerance mm : + - 0.10
 Rated speed rpm : 600
 guide sleeve
 travel mm : 6.00
 Tolerance mm : + - 0.10
 Rated speed rpm : 1380
 guide sleeve
 travel mm : 11.50
 Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : 109
 Rated speed rpm : 600
 Rack travel in mm : 20.00
 Tolerance mm : + - 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 220.5
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 7.0
 Check tolerance
 cm³/1000S. : 10.0

CONTROL LEVER

control lever
 position degree : 35.0
 tolerance degree : + - 4.0
 control lever
 position degree : 99.0
 tolerance degree : + - 4.0

RATED SPEED
 rack travel mm : 13.35
 Rated speed rpm : 1202
 Tolerance 1/min : + - 8
 rack travel mm : 4.00
 Rated speed rpm : 1295

Tolerance 1/min : + 15
rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 73.0
tolerance degree : + 4.0

control lever
position degree : 10.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 7.20

Testing:

Rated speed rpm : 300
rack travel mm : 6.00
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 440
Tolerance 1/min : + 20

TORQUE CONTROL
Rated speed rpm : 1150
rack travel mm : 14.35
Tolerance mm : + 0.05

Rated speed rpm : 650
rack travel mm : 14.35
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 14.35
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : -

rack travel mm : 9.00
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 650
rack travel mm : 12.30
Tolerance mm : + 0.20

Pressure hPa : 250
rack travel mm : 10.00
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 200

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 238.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 137.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 205.0
Tolerance
cm³/1000 strokes : + 10.0

Check tolerance
cm³/1000s. : + - 14.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 6.00

Tolerance mm : + - 0.10

Del. quantity

cm³/1000 strokes : 18.0

Tolerance

cm³/1000 strokes : + - 3.0

Check tolerance

cm³/1000s. : + - 6.0

Speed

Tolerance

cm³/1000 strokes : 5.0

Check tolerance

cm³/1000s. : 8.0

End of test specification sheet.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.10.93
Test oil : ISO 4113

Combination No. : 0 402 649 800A

Injection pump
Pump designation : PE10P120A320LS7809
EP type number : 0 412 629 800

Governor
Governor design. : RQ300/1050PA856
Governor no. : 0 421 801 386

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM443 LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + - 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + - 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : + - 10.0

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : + - 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 2.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + - 1.0

Prestroke mm : 4.05
Tolerance mm : + - 0.05
Check
tolerance mm : + - 0.10

Rack travel in mm : 20.50
Tolerance mm : + - 0.50

Firing order : 10- 9- 4- 1- 8
: - 7- 6- 3- 5
: - 2

Phasing : 0-45-72-117-144
: -189-216-261-288
: -333

Tolerance : + - 0.30
Check
tolerance °NW : + - 0.75

Start of delivery mark

Barrel no. : 10

CRT ZERO POSITION

Rack travel in mm : 14.00
Tolerance mm : + - 0.10

BASIC SETTING

Del. quantity
cm³/1000 strokes : 205.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.70

Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000S. : + - 6.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : 109

Rated speed rpm : 600

Rack travel in mm : 20.00

Tolerance mm : + - 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600

Aneroid pressure

hPa : -

Del. quantity
cm³/1000 strokes : 205.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 102.0

tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 12.70

Rated speed rpm : 1103

Tolerance 1/min : + - 8

rack travel mm : 4.00

Rated speed rpm : 1160

Tolerance 1/min : + - 15

rack travel mm : 0.75

Tolerance mm : + - 0.75

Rated speed rpm : 1300

LOW IDLE

control lever

position degree : 77.0

tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 8.30

Testing:

Rated speed rpm : 300

rack travel mm : 6.70

Tolerance mm : + - 0.10

rack travel mm : 2.00

Rated speed rpm : 400

Tolerance 1/min : + - 20

TORQUE CONTROL

Rated speed rpm : 1050
 rack travel mm : 13.80
 Tolerance mm : + 0.10

 Rated speed rpm : 800
 rack travel mm : 14.40
 Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
 Pressure hPa : 700

MEASUREMENT

Rated speed rpm : 600

 Pressure hPa : 600
 rack travel mm : -1.00
 Tolerance mm : + 0.10

 Pressure hPa : 400
 rack travel mm : -1.50
 Tolerance mm : + 0.10

 Pressure hPa : 1100
 rack travel mm : 1.00
 Tolerance mm : + 0.10

 Pressure hPa : 960
 rack travel mm : 0.35
 Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
 Rated speed rpm : < 220

 Check speed 1/min : > 80
 Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : -
 Rated speed rpm : 1050
 Del. quantity cm³/1000 strokes : 207.5
 Tolerance cm³/1000 strokes : + 1.5

Check tolerance cm³/1000S. : + 4.5
 Spread
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

Aneroid pressure

hPa : -
 Rated speed rpm : 800
 rack travel mm : 14.40
 Tolerance mm : + 0.10
 Del. quantity cm³/1000 strokes : 219.0
 Tolerance cm³/1000 strokes : + 2.0
 Check tolerance cm³/1000S. : + 5.0
 Spread
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

Aneroid pressure

hPa : --
 Rated speed rpm : 500
 Del. quantity cm³/1000 strokes : 134.0
 Tolerance cm³/1000 strokes : + 1.0
 Check tolerance cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 Del. quantity cm³/1000 strokes : 240.0
 Tolerance cm³/1000 strokes : + 10.0
 Check tolerance cm³/1000S. : + 14.0

LOW IDLE

Rated speed rpm : 300

 Rack travel in mm : 6.70
 Tolerance mm : + 0.10
 Del. quantity cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BUSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.10.93
Test oil : ISO 4113

Combination No. : 0 402 649 808A

Injection pump
Pump designation : PE10P120A320LS7809
: -1
EP type number : 0 412 629 801

Governor
Governer design. : RQ300/1050PA762-6
Governer no. : 0 421 801 471

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM443 A
Power KW : 370.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 2.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.05
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 10- 9- 4- 1- 8
: - 7- 6- 3- 5
: - 2

Phasing : 0-45-72-117-144
: -189-216-261-288
: -333

Tolerance : + 0.30
Check tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 10

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.05
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 201.5

Tolerance
cm³/1000 strokes : + - 1.5

Check tolerance
cm³/1000S. : + - 4.5

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.70
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000S. : + - 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : + - 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 201.5

Tolerance
cm³/1000 strokes : + - 1.5

Check tolerance
cm³/1000S. : + - 4.5

Spred
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 98.0
tolerance degree : + - 4.0

RATED SPEED
rack travel mm : 13.00
Rated speed rpm : 1103

Tolerance 1/min : + - 8

rack travel mm : 4.00
Rated speed rpm : 1180
Tolerance 1/min : + - 15

rack travel mm : 0.75
Tolerance mm : + - 0.75
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 76.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 9.20

Testing:

Rated speed rpm : 300
rack travel mm : 6.70
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 400
Tolerance 1/min : + - 20

TORQUE CONTROL

Rated speed rpm : 1050

rack travel mm : 14.05
Tolerance mm : + - 0.05

Rated speed rpm : 750
rack travel mm : 14.80
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Pressure hPa : 400
rack travel mm : 0.70
Tolerance mm : + - 0.10

Pressure hPa : 900
rack travel mm : 3.15
Tolerance mm : + - 0.15

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220
Check speed 1/min : > 80
Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : -
Rated speed rpm : 750
Del. quantity cm³/1000 strokes : 210.5
Tolerance cm³/1000 strokes : + - 1.5
Check tolerance cm³/1000S. : + - 4.5
Spread Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

Aneroid pressure hPa : -

Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 134.0
Tolerance cm³/1000 strokes : + - 1.0
Check tolerance cm³/1000S. : + - 4.0
Spread Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity cm³/1000 strokes : 210.0
Tolerance cm³/1000 strokes : + - 10.0
Check tolerance cm³/1000S. : + - 14.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.70
Tolerance mm : + - 0.10
Del. quantity cm³/1000 strokes : 19.0
Tolerance cm³/1000 strokes : + - 3.0
Check tolerance cm³/1000S. : + - 6.0
Spread Tolerance cm³/1000 strokes : 6.0
Check tolerance cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.08.94
Test oil : ISO 4113

Combination No. : 0 402 649 818

Injection pump
Pump designation : PE10P120A520LS7876
EP type number : 0 412 629 812

Governor
Governor design. : RQ750PA1153
Governor no. : 0 421 801 727

Cust. part No. : 3-7276

Customer-spec. information

Customer : MAN
Motor : D2840LE201
Power KW : 443.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + - 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + - 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + - 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + - 1.0

Prestroke mm : 4.55
Tolerance mm : + - 0.05
Check tolerance mm : + - 0.10

Rack travel in mm : 10.50
Tolerance mm : + - 1.50

Firing order : 10- 9- 4- 1- 8
: - 7- 6- 3- 5
: - 2

Phasing : 0-45-72-117-144
: -189-216-261-288
: -333

Tolerance : + - 0.30
Check tolerance °NW : + - 0.75

Start of delivery mark

Barrel no. : 10

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.75
Tolerance mm : + - 0.05

Del. quantity
cm³/1000 strokes : 370.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 759
guide sleeve
travel mm : 5.39
Tolerance mm : + 0.25

Rated speed rpm : 490
guide sleeve
travel mm : -9.81
Tolerance mm : + 0.25

Rated speed rpm : 840
guide sleeve
travel mm : 17.94
Tolerance mm : + 0.25

Rated speed rpm : 795
guide sleeve
travel mm : 10.00
Tolerance mm : + 0.25

Rated speed rpm : 850
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rack travel in mm : 89.00
Tolerance mm : + 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 370.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 14.70

Rated speed rpm : 787
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 950

Rated speed rpm : 751
rack travel mm : 14.70

Rated speed rpm : 788
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 950

Rated speed rpm : 752
rack travel mm : 14.70

Rated speed rpm : 789
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 950

Rated speed rpm : 753
rack travel mm : 14.70

Rated speed rpm : 790
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 950

Rated speed rpm : 754
rack travel mm : 14.70

Rated speed rpm : 791
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 950

Rated speed rpm : 755
rack travel mm : 14.70

Rated speed rpm : 792
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 950

Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

TORQUE CONTROL
Rated speed rpm : 700
rack travel mm : 15.75
Tolerance mm : + 0.05

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 17.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.02.98
Test oil : ISO 4113

Combination No. : 0 402 666 802

Injection pump
Pump designation : PE6P120A320/3LS7883
EP type number : 0 412 626 938

Governor
Governor design. : RSV600...1050POA591
Governor no. : 0 421 833 457

Cust. part No. : 0250746802

Customer-spec. information

Customer : MB-NFZ
Motor : OM 401 LA
Power KW : 213.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm : 12.60
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 207.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance cm³/1000S. : + - 4.0

Spread

Tolerance cm³/1000 strokes : 6.0

Check tolerance cm³/1000S. : 9.0

Rated speed rpm : 600

Rack travel in mm : 3.80

Tolerance mm : + - 0.10

Del. quantity cm³/1000 strokes : 13.0

Tolerance cm³/1000 strokes : + - 3.0

Check tolerance cm³/1000S. : + - 6.0

Spred

Tolerance cm³/1000 strokes : 8.0

Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + - 0.20

governor spring pre-tension
click setting x : 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1030
Aneroid pressure hPa : -
Del. quantity cm³/1000 strokes : 207.0
Tolerance cm³/1000 strokes : + - 1.0

Check tolerance cm³/1000S. : + - 4.0
Spred
Tolerance cm³/1000 strokes : 6.0
Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 88.0
tolerance degree : + - 4.0

LOW IDLE

control lever position degree : 71.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 600
rack travel mm : 3.80
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 630
Tolerance 1/min : + - 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL
Rated speed rpm : 1030
rack travel mm : 12.60
Tolerance mm : + - 0.05

Rated speed rpm : 700
rack travel mm : 12.60
Tolerance mm : + - 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 206.5
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000S. : + - 14.0

LOW IDLE

Rated speed rpm : 600
Rack travel in mm : 3.80
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.11.90
Test oil : ISO 4113

Combination No. : 0 402 670 804

Injection pump
Pump designation : PE12P120A320LS7813
: -1
EP type number : 0 412 620 811

Governor
Governor design. : RSV350...750POA825
: -5
Governor no. : 0 421 833 277

Cust. part No. :

Customer spec. information
Customer : MB-NFZ
Motor : OM 444 LA
Power KW : 441.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 160
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 2.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 20.00
Tolerance mm : + 1.00

Firing order : 12- 1- 5- 9- 8
: - 3- 4- 11- 10
: - 2- 6- 7

Phasing : 0-45-60-105-120
: -165-180-225-240
: -285-300-345

Tolerance : + 0.50
Check tolerance °NW : + 0.75

BASIC SETTING

Del. quantity cm³/1000 strokes : 280.0

Tolerance cm³/1000 strokes : + 1.0

Check tolerance cm³/1000s. : + 4.0

Spread _____

Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

Rated speed rpm : 350
 Rack travel in mm : 5.70
 Tolerance mm : + - 0.20
 Del. quantity
 cm³/1000 strokes : 17.0
 Tolerance
 cm³/1000 strokes : + - 3.0
 Check tolerance
 cm³/1000S. : + - 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.85
 Tolerance mm : + - 0.55

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 280.0
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 24.0
 tolerance degree : + - 4.0

RATED SPEED
 rack travel mm : 13.10
 Rated speed rpm : 753
 Tolerance 1/min : + - 3

rack travel mm : 4.00
 Rated speed rpm : 785
 Tolerance 1/min : + - 5

rack travel mm : 1.00
 Tolerance mm : + - 0.70
 Rated speed rpm : 1000

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
 rack travel mm : 15.50

Rated speed rpm : 779
 Tolerance 1/min : + - 4
 rack travel mm : 4.00

rack travel mm : 1.00
 Tolerance mm : + - 0.70
 Rated speed rpm : 900

Rated speed rpm : 751
 rack travel mm : 15.50

Rated speed rpm : 780
 Tolerance 1/min : + - 4
 rack travel mm : 4.00

rack travel mm : 1.00
 Tolerance mm : + - 0.70
 Rated speed rpm : 900

Rated speed rpm : 752
 rack travel mm : 15.50

Rated speed rpm : 781
 Tolerance 1/min : + - 4
 rack travel mm : 4.00

rack travel mm : 1.00
 Tolerance mm : + - 0.70
 Rated speed rpm : 900

Rated speed rpm : 753

rack travel mm : 15.50

Rated speed rpm : 782

Tolerance 1/min : + 4

rack travel mm : 4.00

rack travel mm : 1.00

Tolerance mm : + 0.70

Rated speed rpm : 900

Rated speed rpm : 754

rack travel mm : 15.50

Rated speed rpm : 783

Tolerance 1/min : + 4

rack travel mm : 4.00

rack travel mm : 1.00

Tolerance mm : + 0.70

Rated speed rpm : 900

Rated speed rpm : 755

rack travel mm : 15.50

Rated speed rpm : 784

Tolerance 1/min : + 4

rack travel mm : 4.00

rack travel mm : 1.00

Tolerance mm : + 0.70

Rated speed rpm : 900

LOW IDLE

control lever

position degree : 13.0

tolerance degree : + 4.0

Testing:

Rated speed rpm : 350

rack travel mm : 5.70

Tolerance mm : + 0.20

SET IDLE AUXILIARY SPRING

Rated speed rpm : 350

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -

Rated speed rpm : 600

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm³/1000 strokes : 275.0

Tolerance

cm³/1000 strokes : + 10.0

Check tolerance

cm³/1000S. : + 14.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.70

Tolerance mm : + 0.20

Del. quantity

cm³/1000 strokes : 17.0

Tolerance

cm³/1000 strokes : + 3.0

Check tolerance

cm³/1000S. : + 6.0

Spread

Tolerance

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.02.98
Test oil : ISO 4113

Combination No. : 0 402 670 807

Injection pump
Pump designation : PE12P120A320LS7814
: -1
EP type number : 0 412 620 819

Governor
Governor design. : RSV375...1050POA535
: -3
Governor no. : 0 421 833 328

Cust. part No. :

Customer-spec. information

Customer : MB-NFZ
Motor : OM 444 LA
Power KW : 588.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 160
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.85
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 20.00
Tolerance mm : + 1.00

Firing order : 12- 1- 5- 9- 3
: - 3- 4- 11- 10
: - 2- 6- 7

Phasing : 0-45-60-105-120
: -165-180-225-240
: -285-300-345
Tolerance : + 0.50

Check tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.10
Check tolerance °NW : + 0.75

Barrel no. : 12

CRT ZERO POSITION

Rack travel in mm : 14.00
Tolerance mm : + - 0.10

BASIC SETTING

Rated speed rpm : 650

Rack travel in mm : 14.00
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 263.5

Tolerance
cm³/1000 strokes : + - 1.5

Check tolerance
cm³/1000S. : + - 4.5

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 375

Rack travel in mm : 5.25
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000S. : + - 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + - 0.20

governor spring
pre-tension
click setting x : 3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 650

Aneroid pressure
hPa : 1100

Del. quantity
cm³/1000 strokes : 263.5

Tolerance
cm³/1000 strokes : + - 1.5

Check tolerance
cm³/1000S. : + - 4.5

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 100.0
tolerance degree : + - 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1070

Tolerance 1/min : + - 1
rack travel mm : 12.80

Rated speed rpm : 1154
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.90
Tolerance mm : + - 0.60
Rated speed rpm : 1250

Rated speed rpm : 1072
Tolerance 1/min : + - 1
rack travel mm : 12.80

Rated speed rpm : 1156
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.90

Tolerance mm : + 0.60
Rated speed rpm : 1250

Rated speed rpm : 1074
Tolerance 1/min : + 1
rack travel mm : 12.80

Rated speed rpm : 1158
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.90
Tolerance mm : + 0.60
Rated speed rpm : 1250

Rated speed rpm : 1076
Tolerance 1/min : + 1
rack travel mm : 12.80

Rated speed rpm : 1160
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.90
Tolerance mm : + 0.60
Rated speed rpm : 1250

Rated speed rpm : 1078
Tolerance 1/min : + 1
rack travel mm : 12.80

Rated speed rpm : 1162
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.90
Tolerance mm : + 0.60
Rated speed rpm : 1250

Rated speed rpm : 1080
Tolerance 1/min : + 1
rack travel mm : 12.80

Rated speed rpm : 1164
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.90
Tolerance mm : + 0.60
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 76.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 8.00

Testing:

Rated speed rpm : 375
rack travel mm : 5.25
Tolerance mm : + 0.10

rack travel mm : > 2.00

Rated speed rpm : 410

SET IDLE AUXILIARY SPRING

Rated speed rpm : 100
rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 650
rack travel mm : 14.00
Tolerance mm : + 0.10

Rated speed rpm : 1030
rack travel mm : 13.80
Tolerance mm : + 0.10

Rated speed rpm : 750
rack travel mm : 14.50
Tolerance mm : + 0.10

Rated speed rpm : 950
rack travel mm : 14.30
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1100
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 600

Pressure hPa : 400
rack travel mm : -4.00

Tolerance mm : + - 0.10
Pressure hPa : 1370
rack travel mm : 0.30
Tolerance mm : + - 0.05

Pressure hPa : 650
rack travel mm : -1.40
Tolerance mm : + - 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1800
Rated speed rpm : 1030
Del. quantity
cm³/1000 strokes : 262.5
Tolerance
cm³/1000 strokes : + - 1.5
Check tolerance
cm³/1000S. : + - 4.5
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1800
Rated speed rpm : 750
rack travel mm : 14.50
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 280.5
Tolerance
cm³/1000 strokes : + - 1.5
Check tolerance
cm³/1000S. : + - 4.5
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Spread

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 270.0
Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000S. : + - 14.0

LOW IDLE

Rated speed rpm : 375
Rack travel in mm : 5.25
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.03.97
Test oil : ISO 4113

Combination No. : 0 402 670 810

Injection pump
Pump designation : PE12P120A520/5RS7375
EP type number : 0 412 620 844

Governor
Governor design. : RSVU300...900POA361
Governor no. : 0 421 829 110

Cust. part No. : 1 2277 426

Customer-spec. information

Customer : MM
Motor : TBD 616-V12
Power KW : 648.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2/3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 120
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.60
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 13.00
Tolerance mm : + 0.50

Firing order : 1-2-9-10-5-6
: -11-12-3-4
: -7-8

Phasing : 0-30-60-90-120-150
: -180-210-240-270
: -300-330
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.30
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 325.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : 4.90
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 30.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa

Del. quantity
cm³/1000 strokes : 325.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 105.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 950

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 12.30

Rated speed rpm : 784
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 950

Rated speed rpm : 751
rack travel mm : 12.30

Rated speed rpm : 785
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 950

Rated speed rpm : 752

rack travel mm : 12.30

Rated speed rpm : 786
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : + - 0.70
Rated speed rpm : 950

Rated speed rpm : 753
rack travel mm : 12.30

Rated speed rpm : 787
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : + - 0.70
Rated speed rpm : 950

Rated speed rpm : 754
rack travel mm : 12.30

Rated speed rpm : 788
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : + - 0.70
Rated speed rpm : 950

Rated speed rpm : 755
rack travel mm : 12.30

Rated speed rpm : 789
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : + - 0.70
Rated speed rpm : 950

LOW IDLE

control lever
position degree : 78.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.40
Tolerance mm : + - 0.10

Testing:

Rated speed rpm : 325
rack travel mm : 4.90
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 360
Tolerance 1/min : + - 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.30
Tolerance mm : + - 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 350.0
Tolerance
cm³/1000 strokes : + - 20.0
Check tolerance
cm³/1000S. : + - 24.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 4.90
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.04.97
Test oil : ISO 4113

Combination No. : 0 402 670 812

Injection pump
Pump designation : PE12P120A320LS7902
EP type number : 0 412 620 848

Governor
Governor design. : RSV350...1050POA662
Governor no. : 0 421 833 579

Cust. part No. : 027 074 4302

Customer-spec. information
Customer : MB-NFZ
Motor : OM 444 LA
Power KW : 448.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 077

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 12- 1- 5- 9- 8
: - 3- 4- 11- 10
: - 2- 6- 7

Phasing : 0-45-60-105-120
: -165-180-225-240
: -285-300-345

Start of delivery mark

Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm : 13.40
 Tolerance mm : + - 0.05
 Del. quantity cm³/1000 strokes : 199.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Spread
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

Rated speed rpm : 350
 Rack travel in mm : 6.20
 Tolerance mm : + - 0.10
 Del. quantity cm³/1000 strokes : 19.0
 Tolerance cm³/1000 strokes : + - 3.0
 Check tolerance cm³/1000S. : + - 6.0
 Spread
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : + - 0.20
 governor spring pre-tension click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP
 Rated speed rpm : 1030
 Aneroid pressure hPa : 1250
 Del. quantity cm³/1000 strokes : 199.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Spread
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 94.0
 tolerance degree : + - 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1070
 rack travel mm : 12.40
 Rated speed rpm : 1145
 Tolerance 1/min : + - 4
 rack travel mm : 4.00
 rack travel mm : 0.85
 Tolerance mm : + - 0.55
 Rated speed rpm : 1350

Rated speed rpm : 1071
 rack travel mm : 12.40
 Rated speed rpm : 1146
 Tolerance 1/min : + - 4
 rack travel mm : 4.00
 rack travel mm : 0.85
 Tolerance mm : + - 0.55
 Rated speed rpm : 1350

Rated speed rpm : 1072
 rack travel mm : 12.40
 Rated speed rpm : 1147
 Tolerance 1/min : + - 4
 rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1350

Rated speed rpm : 1073
rack travel mm : 12.40

Rated speed rpm : 1148
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1350

Rated speed rpm : 1074
rack travel mm : 12.40

Rated speed rpm : 1149
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1350

Rated speed rpm : 1075
rack travel mm : 12.40

Rated speed rpm : 1150
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 72.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 9.30

Testing:

Rated speed rpm : 350
rack travel mm : 6.20
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 405
Tolerance 1/min : + - 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL
Rated speed rpm : 1030
rack travel mm : 13.40
Tolerance mm : + - 0.05

Rated speed rpm : 800
rack travel mm : 13.40
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1250
rack travel mm : 13.40
Tolerance mm : + - 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.40
Tolerance mm : + - 0.15

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 550
rack travel mm : 12.65
Tolerance mm : + - 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1250
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 162.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Spred
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : + - 15.0
Check tolerance
cm³/1000S. : + - 19.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 6.20
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spred
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.03.98
Test oil : ISO 4113

Combination No. : 0 402 676 830

Injection pump
Pump designation : PE6P120A320LS7894
EP type number : 0 412 626 954

Governor
Governor design. : RSV600...1050POA642
Governor no. : 0 421 833 556

Cust. part No. : 0270746002

Customer-spec. information

Customer : MB-NFZ
Motor : OM 441 LA
Power KW : 285.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 105
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.75
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 19.00
Tolerance mm : + 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-45-120-165-240
: -285
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.10
Check tolerance °NW : + 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 1075

Rack travel in mm : 13.70
Tolerance mm : + - 0.05

Del. quantity
cm³/1000 strokes : 251.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spred

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : + - 3.0

Rated speed rpm : 600

Rack travel in mm : 2.00
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000S. : + - 6.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + - 0.20

governor spring
pre-tension
click setting x : 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1075

Aneroid pressure

hPa : -

Del. quantity
cm³/1000 strokes : 251.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spred

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : + - 9.0

CONTROL LEVER

control lever

position degree : 89.0
tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 12.70

Rated speed rpm : 1115

Tolerance 1/min : + - 5

Check
speed 1/min : + - 10

LOW IDLE

control lever
position degree : 73.0
tolerance degree : + - 4.0

Testing:

Rated speed rpm : 600

rack travel mm : 2.00
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 630

Tolerance 1/min : + - 30

TORQUE CONTROL

Rated speed rpm : 1075

rack travel mm : 13.70

Tolerance mm : + - 0.05

Rated speed rpm : 800
rack travel mm : 14.75
Tolerance mm : + - 0.10

Rated speed rpm : 1000
rack travel mm : 14.35
Tolerance mm : + - 0.15

End of test specification sheet

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 291.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 290.0
Tolerance
cm³/1000 strokes : + - 15.0
Check tolerance
cm³/1000S. : + - 19.0

LOW IDLE

Rated speed rpm : 600
Rack travel in mm : 2.00
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.03.98
Test oil : ISO 4113

Combination No. : 0 402 678 803

Injection pump
Pump designation : PE8P120A320LS7801-1
EP type number : 0 412 628 818

Governor
Governor design. : RSV350...750P0A825
: -3
Governor no. : 0 421 833 260

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM442A
Power KW : 240.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 1.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.15
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 234.0

Tolerance _____
cm³/1000 strokes : + 1.0

Check tolerance _____
cm³/1000s. : + 4.0

Spred _____

Tolerance _____
cm³/1000 strokes : 5.0

Check tolerance _____
cm³/1000s. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.30

Tolerance mm : + 0.10

Del. quantity cm³/1000 strokes : 19.0

Tolerance cm³/1000 strokes : + 3.0

Check tolerance cm³/1000s. : + 6.0

Spred _____

Tolerance cm³/1000 strokes : 8.0

Check tolerance cm³/1000s. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure hPa : -

Del. quantity cm³/1000 strokes : 234.0

Tolerance cm³/1000 strokes : + 1.0

Check tolerance cm³/1000s. : + 4.0

Spred _____

Tolerance cm³/1000 strokes : 5.0

Check tolerance cm³/1000s. : 9.0

CONTROL LEVER

control lever position degree : 78.0
tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 14.15

Rated speed rpm : 789
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 900

Rated speed rpm : 751
rack travel mm : 14.15

Rated speed rpm : 790
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 900

Rated speed rpm : 752
rack travel mm : 14.15

Rated speed rpm : 791
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 900

Rated speed rpm : 753
rack travel mm : 14.15

Rated speed rpm : 792
Tolerance 1/min : + 4

rack travel mm : 4.00
rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 900

Rated speed rpm : 754
rack travel mm : 14.15

Rated speed rpm : 793
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 900

Rated speed rpm : 755
rack travel mm : 14.15

Rated speed rpm : 794
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 900

LOW IDLE

control lever
position degree : 64.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 15.00

Testing:

Rated speed rpm : 350
rack travel mm : 5.30
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 380
Tolerance 1/min : + - 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 15.15
Tolerance mm : + - 0.05
Rated speed rpm : 600
rack travel mm : 15.15
Tolerance mm : + - 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 236.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000S. : + - 14.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.30
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.06.95
Test oil : ISO 4113

Combination No. : 0 402 678 828

Injection pump
Pump designation : PE8P120A520/5RS7381
EP type number : 0 412 628 907

Governor
Governor design. : RSVU300...900POA363
Governor no. : 0 421 829 111

Cust. part No. : 1 2277 434

Customer-spec. information

Customer : MWM
Motor : TBD 616
Power KW : 432.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.60
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 13.00
Tolerance mm : + 0.50

Firing order : 1- 8- 5- 4- 7
: - 2- 3- 6

Phasing : 0-30-90-120-180
: -210-270-300

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.30
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 325.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S.

: + 4.0

Spred

Tolerance

cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S.

: 9.0

Rated speed rpm : 325

Rack travel in mm : 4.30

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 30.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S.

: + 6.0

Spred

Tolerance

cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S.

: 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

governor spring
pre-tension

click setting x : 3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure

hPa : -

Del. quantity
cm³/1000 strokes : 325.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S.

: + 4.0

Spred

Tolerance

cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S.

: 9.0

CONTROL LEVER

control lever
position degree : 109.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 950

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 12.30

Rated speed rpm : 784
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 950

Rated speed rpm : 751
rack travel mm : 12.30

Rated speed rpm : 785
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 950

Rated speed rpm : 752
rack travel mm : 12.30

Rated speed rpm : 786
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 950

Rated speed rpm : 753
rack travel mm : 12.30

Rated speed rpm : 787
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 1.00

Tolerance mm : + - 0.70
Rated speed rpm : 950

Rated speed rpm : 754
rack travel mm : 12.30

Rated speed rpm : 788
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : + - 0.70
Rated speed rpm : 950

Rated speed rpm : 755
rack travel mm : 12.30

Rated speed rpm : 789
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : + - 0.70
Rated speed rpm : 950

LOW IDLE

control lever
position degree : 81.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 3.80
Tolerance mm : + - 0.10

Testing:

Rated speed rpm : 325
rack travel mm : 4.30
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 360
Tolerance 1/min : + - 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.30
Tolerance mm : + - 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 350.0
Tolerance
cm³/1000 strokes : + - 20.0
Check tolerance
cm³/1000S. : + - 24.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 4.30
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.11.96
Test oil : ISO 4113

Combination No. : 0 402 678 834

Injection pump
Pump designation : PE8P120A320LS7903
EP type number : 0 412 628 920

Governor
Governor design. : RSV600...950POA663
Governor no. : 0 421 833 580

Cust. part No. : 027 074 4602

Customer-spec. information
Customer : MB-NFZ
Motor : OM442A
Power KW : 250.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 170
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 2.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.10
Check
tolerance °NW : + 0.50

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 930

Rack travel in mm : 13.40
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 201.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 600

Rack travel in mm : 4.30
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 930

Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 201.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 88.0
tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 970
rack travel mm : 12.40

Rated speed rpm : 1035
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1100

Rated speed rpm : 971
rack travel mm : 12.40

Rated speed rpm : 1036
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1100

Rated speed rpm : 972
rack travel mm : 12.40

Rated speed rpm : 1037
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1100

Rated speed rpm : 973
rack travel mm : 12.40

Rated speed rpm : 1038
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1100

Rated speed rpm : 974
rack travel mm : 12.40

Rated speed rpm : 1039
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1100

Rated speed rpm : 975
rack travel mm : 12.40

Rated speed rpm : 1040
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 600
rack travel mm : 4.30
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 630
Tolerance 1/min : + 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 930
rack travel mm : 13.40
Tolerance mm : + 0.05

Rated speed rpm : 600
rack travel mm : 13.70
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : -

Rated speed rpm : 500
Pressure hPa : 470
rack travel mm : 0.70
Tolerance mm : + 0.05

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 630
rack travel mm : 1.75
Tolerance mm : + 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 208.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000s. : + 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : + 10.0
Check tolerance
cm³/1000S. : + 14.0

LOW IDLE

Rated speed rpm : 500
Rack travel in mm : 4.30
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 05.12.94
Test oil : ISO 4113

Combination No. : 0 402 746 809

Injection pump
Pump designation : PES6P120A320RS7132
EP type number : 0 412 726 806

Governor
Governor design. : RQ750PA836
Governor no. : 0 421 801 373

Cust. part No. :

Customer-spec. information

Customer : PERKINS
Motor : EAGLE LE
Power KW : 240.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x Length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1-4-2-6-3-
: 5

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.85
Tolerance mm : + 0.05

Del. quantity cm³/1000 strokes : 279.5

Tolerance cm³/1000 strokes : + 1.0

Check tolerance cm³/1000S. : + 4.0

Spread _____

Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

Rated speed rpm : 300
 Rack travel in mm : 6.40
 Tolerance mm : + - 0.10
 Del. quantity
 cm³/1000 strokes : 41.0
 Tolerance
 cm³/1000 strokes : + - 3.0
 Check tolerance
 cm³/1000S. : + - 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(E) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 761
 guide sleeve
 travel mm : 4.04
 Tolerance mm : + - 0.25

 Rated speed rpm : 920
 guide sleeve
 travel mm : 42.18
 Tolerance mm : + - 0.25

 Rated speed rpm : 800
 guide sleeve
 travel mm : 8.98
 Tolerance mm : + - 0.25

 Rated speed rpm : 807
 guide sleeve
 travel mm : 10.00
 Tolerance mm : + - 0.25

 Rated speed rpm : 860
 guide sleeve
 travel mm : 11.50
 Tolerance mm : + - 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 279.5
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 31.0
 tolerance degree : + - 4.0

 control lever
 position degree : 94.0
 tolerance degree : + - 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 760
 rack travel mm : 12.90

 Rated speed rpm : 788
 Tolerance 1/min : + - 5
 rack travel mm : 4.00

 rack travel mm : 0.50
 Tolerance mm : + - 0.50
 Rated speed rpm : 820

 Rated speed rpm : 761
 rack travel mm : 12.90

 Rated speed rpm : 789
 Tolerance 1/min : + - 5
 rack travel mm : 4.00

 rack travel mm : 0.50
 Tolerance mm : + - 0.50
 Rated speed rpm : 820

 Rated speed rpm : 762
 rack travel mm : 12.90

 Rated speed rpm : 790
 Tolerance 1/min : + - 5
 rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 820

Rated speed rpm : 763
rack travel mm : 12.90

Rated speed rpm : 791
Tolerance 1/min : + - 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 820

Rated speed rpm : 764
rack travel mm : 12.90

Rated speed rpm : 792
Tolerance 1/min : + - 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 820

Rated speed rpm : 765
rack travel mm : 12.90

Rated speed rpm : 793
Tolerance 1/min : + - 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 820

LOW IDLE

control lever
position degree : 69.0
tolerance degree : + - 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.40
Tolerance mm : + - 0.10

TORQUE CONTROL
Rated speed rpm : 700
rack travel mm : 13.85
Tolerance mm : + - 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 19.00
Tolerance mm : + - 0.50
Del. quantity
cm³/1000 strokes : 260.0
Tolerance
cm³/1000 strokes : + - 20.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.40
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 41.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 11.11.93
Test oil : ISO 4113

Combination No. : 0 402 746 901

Injection pump
Pump designation : PES6P120A720RS7224
EP type number : 0 412 726 840

Governor
Governor design. : RQV275...1100PA975K
Governor no. : 0 421 815 266

Cust. part No. :

Customer-spec. information
Customer : IVECO-UNIC
Motor : 8460.41.406

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.15
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.75
Tolerance mm : + 0.05

Rated speed rpm : 275

Rack travel in mm : 5.20
Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 26.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000s. : + 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000s. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1140
 Rack travel in mm : 16.50
 Tolerance mm : + 1.30

CONTROL LEVER

control lever
 position degree : 119.0
 tolerance degree : + 4.0

RATED SPEED
 rack travel mm : 11.70
 Rated speed rpm : 1145
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1235
 Tolerance 1/min : + 15
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever
 position degree : 69.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100
 CRT mm min. : > 6.70
 Testing:
 Rated speed rpm : 275
 rack travel mm : 5.20
 Tolerance mm : + 0.10
 Rated speed rpm : 335

TORQUE CONTROL
 Rated speed rpm : 1100
 rack travel mm : 12.75
 Tolerance mm : + 0.05
 Rated speed rpm : 900
 rack travel mm : 12.70
 Tolerance mm : + 0.10
 Rated speed rpm : 500
 rack travel mm : 11.60
 Tolerance mm : + 0.10
 Rated speed rpm : 700
 rack travel mm : 12.10
 Tolerance mm : + 0.10
 Rated speed rpm : 350
 rack travel mm : 11.20
 Tolerance mm : + 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 900
 Pressure hPa : 1200
 rack travel mm : 12.75
 Tolerance mm : + 0.05
 Rated speed rpm : 900
 Pressure hPa : -
 rack travel mm : 7.50
 Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 900
 Pressure hPa : 410
 rack travel mm : 8.80
 Tolerance mm : + 0.20

Pressure hPa : 750
rack travel mm : 11.35
Tolerance mm : + 0.05

Tolerance
cm³/1000 strokes : + 15.0
Check tolerance
cm³/1000S. : + 19.0

Start interlock

Rated speed rpm : > 170
Rated speed rpm : < 220

Check
speed 1/min : > 150
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

LOW IDLE

Rated speed rpm : 275
Rack travel in mm : 5.20
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure

hPa : 1200
Rated speed rpm : 500
rack travel mm : 11.60
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 243.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

End of test specification sheet

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 140.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.09.93
Test oil : ISO 4113

Combination No. : 0 402 746 939

Injection pump
Pump designation : PES6P130A320RS7271
EP type number : 0 412 736 804

Governor
Governor design. : RQV450...1500PA1049
Governor no. : 0 421 814 032

Cust. part No. :

Customer-spec. information
Customer : SEATEK
Motor : 64/V9

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 450

Rack travel in mm : 3.00
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000s. : + 6.0

Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : 104
 Rated speed rpm : 1575

Rack travel in mm : 9.40
 Tolerance mm : + 1.30

CONTROL LEVER

control lever
 position degree : 106.0
 tolerance degree : + 4.0

RATED SPEED
 rack travel mm : 9.40
 Rated speed rpm : 1545
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1645
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1750

LOW IDLE

control lever
 position degree : 68.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 6.20

Testing:

Rated speed rpm	:	450
rack travel mm	:	3.00
Tolerance mm	:	+ 0.10
rack travel mm	:	2.00
Rated speed rpm	:	480
Tolerance 1/min	:	+ 20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm	:	500
Pressure hPa	:	1000
rack travel mm	:	10.45
Tolerance mm	:	+ 0.05

Rated speed rpm	:	500
Pressure hPa	:	-
rack travel mm	:	6.40
Tolerance mm	:	+ 0.10

MEASUREMENT

Rated speed rpm	:	500
Pressure hPa	:	185
rack travel mm	:	7.40
Tolerance mm	:	+ 0.20

Pressure hPa	:	300
rack travel mm	:	9.45
Tolerance mm	:	+ 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa	:	-
Rated speed rpm	:	500
Del. quantity cm ³ /1000 strokes	:	140.0
Tolerance cm ³ /1000 strokes	:	+ 2.0
Check tolerance cm ³ /1000S.	:	+ 5.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

LOW IDLE

Rated speed rpm : 450
Rack travel in mm : 3.00
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.12.94
Test oil : ISO 4113

Combination No. : 0 402 746 949A

Injection pump
Pump designation : PES6P120A720RS7224
: -2
EP type number : 0 412 726 893

Governor
Governor design. : RQV275...1100PA975
: -3K
Governor no. : 0 421 815 350

Cust. part No. :

Customer-spec. information
Customer : IVECO-FRANCE
Motor : 8460.41.406
Power KW : 253.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5

Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.15
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

Check
tolerance °NW : + 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.75
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 195.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.50

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 26.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1155

guide sleeve

travel mm : 10.55

Tolerance mm : + 0.15

Rated speed rpm : 275

guide sleeve

travel mm : 2.00

Tolerance mm : + 0.20

Rated speed rpm : 764

guide sleeve

travel mm : 6.24

Tolerance mm : + 0.25

Rated speed rpm : 430

guide sleeve

travel mm : 3.63

Tolerance mm : + 0.25

Rated speed rpm : 1350

guide sleeve

travel mm : 13.50

Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1

Rated speed rpm : 1225

Rack travel in mm : 10.00

Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure

hPa : 1200

Del. quantity
cm³/1000 strokes : 195.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance

cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 119.0

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.70

Rated speed rpm : 1145

Tolerance 1/min : + 5

rack travel mm : 4.00

Rated speed rpm : 1215

Tolerance 1/min : + 15

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 1350

LOW IDLE**control lever**

position degree : 66.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 6.70

Testing:

Rated speed rpm : 275
rack travel mm : 5.50
Tolerance mm : + - 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.75
Tolerance mm : + - 0.05

Rated speed rpm : 800
rack travel mm : 11.75
Tolerance mm : + - 0.10

Rated speed rpm : 500
rack travel mm : 10.95
Tolerance mm : + - 0.15

Rated speed rpm : 350
rack travel mm : 11.40
Tolerance mm : + - 0.20

ANEROID/ALTITUDE COMPENSATOR TEST**SETTING**

Rated speed rpm : 1100
Pressure hPa : 1200
rack travel mm : 11.75
Tolerance mm : + - 0.05

Rated speed rpm : 1100
Pressure hPa : -
rack travel mm : 7.60
Tolerance mm : + - 0.10

MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 360
rack travel mm : 8.70
Tolerance mm : + - 0.20

Pressure hPa : 600
rack travel mm : 10.85
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 170
Rated speed rpm : < 220

Check speed 1/min : > 150
Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200
Rated speed rpm : 500
rack travel mm : 10.95
Tolerance mm : + - 0.15
Del. quantity cm³/1000 strokes : 220.0
Tolerance cm³/1000 strokes : + - 3.0
Check tolerance cm³/1000S. : + - 6.0

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 120.0
Tolerance cm³/1000 strokes : + - 1.0
Check tolerance cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity cm³/1000 strokes : 140.0
Tolerance cm³/1000 strokes : + - 15.0
Check tolerance cm³/1000S. : + - 19.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 5.50

Tolerance mm : + 0.10

Del. quantity

cm³/1000 strokes : 26.0

Tolerance

cm³/1000 strokes : + 3.0

Check tolerance

cm³/1000S. : + 6.0

Spred

Tolerance

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.11.94
Test oil : ISO 4113

Combination No. : 0 402 746 950A

Injection pump
Pump designation : PES6P120A720RS7224

: -2

EP type number :

Governor
Governor design. : RQV275...1100PA975

: -4K

Governor no. :

Cust. part No. :

Customer-spec. information

Customer : IVECO-FRANCE
Motor : 8460.41.320

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.15
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

Check tolerance °NW : + 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.65
Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 168.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

Rated speed rpm : 275
 Rack travel in mm : 5.30
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 35.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1145
 guide sleeve
 travel mm : 10.40
 Tolerance mm : + 0.15
 Rated speed rpm : 275
 guide sleeve
 travel mm : 1.90
 Tolerance mm : + 0.20
 Rated speed rpm : 750
 guide sleeve
 travel mm : 6.10
 Tolerance mm : + 0.25
 Rated speed rpm : 430
 guide sleeve
 travel mm : 3.60

Tolerance mm : + 0.25
 Rated speed rpm : 1360
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1235
 Rack travel in mm : 10.30
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 168.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 120.0
 tolerance degree : + 4.0
 RATED SPEED
 rack travel mm : 10.30
 Rated speed rpm : 1170
 Tolerance 1/min : + 5
 Check
 speed 1/min : + 10
 rack travel mm : 4.00
 Rated speed rpm : 1235
 Tolerance 1/min : + 15
 Check
 speed 1/min : + 20
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever

position degree : 76.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 6.80

Testing:

Rated speed rpm : 275
rack travel mm : 5.30
Tolerance mm : \pm 0.10

Rated speed rpm : 335

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 10.65
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 9.50
Tolerance mm : \pm 0.10

Rated speed rpm : 900
rack travel mm : 10.20
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST**SETTING**

Rated speed rpm : 1100
Pressure hPa : 1200
rack travel mm : 10.65
Tolerance mm : \pm 0.05

Rated speed rpm : 1100
Pressure hPa : -
rack travel mm : 7.80
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 420
rack travel mm : 8.40
Tolerance mm : \pm 0.20

Pressure hPa : 600
rack travel mm : 10.05
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 170
Rated speed rpm : < 220

Check speed 1/min : > 150
Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200
Rated speed rpm : 700
Del. quantity cm³/1000 strokes : 163.0
Tolerance cm³/1000 strokes : \pm 3.0
Check tolerance cm³/1000S. : \pm 6.0

rack travel mm : 10.20
Tolerance mm : \pm 0.15

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 118.0
Tolerance cm³/1000 strokes : \pm 1.0
Check tolerance cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity cm³/1000 strokes : 150.0
Tolerance cm³/1000 strokes : \pm 15.0
Check tolerance cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 5.30

Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 35.0

Tolerance
cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000S. : + - 6.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.03.98
Test oil : ISO 4113

Combination No. : 0 402 746 951

Injection pump
Pump designation : PES6P120A720RS7292
EP type number : -1
EP type number : 0 412 726 939

Governor
Governor design. : RQV350...1150PA1074K
Governor no. : 0 421 815 355

Cust. part No. : 0240747902

Customer-spec. information

Customer : MB-NFZ
Motor : OM366LA
Power KW : 127.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.00
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery blocking

*NW after s.o.d. : 3.30
Tolerance : + 0.10
Check tolerance *NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.20
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 271.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 6.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spred

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1205
guide sleeve
travel mm : 9.35

Tolerance mm : \pm 0.15

Rated speed rpm : 350
guide sleeve
travel mm : 1.53

Tolerance mm : \pm 0.20

Rated speed rpm : 855
guide sleeve
travel mm : 5.56

Tolerance mm : \pm 0.25

Rated speed rpm : 550
guide sleeve
travel mm : 3.17

Tolerance mm : \pm 0.25

Rated speed rpm : 1480
guide sleeve
travel mm : 13.50

Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1

Rated speed rpm : 1329

Rack travel in mm : 13.00
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 271.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 109.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 13.20

Rated speed rpm : 1195

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1320

Tolerance 1/min : \pm 15

rack travel mm : 0.70

Tolerance mm : \pm 0.70

Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 65.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : > 6.88

Testing:

Rated speed rpm : 350
rack travel mm : 6.00
Tolerance mm : + - 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 14.20
Tolerance mm : + - 0.05

Rated speed rpm : 950
rack travel mm : 13.80
Tolerance mm : + - 0.10

Rated speed rpm : 750
rack travel mm : 13.20
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
Pressure hPa : 1500
rack travel mm : 14.20
Tolerance mm : + - 0.05

Rated speed rpm : 1150
Pressure hPa : -
rack travel mm : 10.90
Tolerance mm : + - 0.15

MEASUREMENT

Rated speed rpm : 1150

Pressure hPa : 850
rack travel mm : 13.60
Tolerance mm : + - 0.05

Pressure hPa : 350
rack travel mm : 11.70
Tolerance mm : + - 0.15

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 280

Check speed 1/min : > 80
Check speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1500
Rated speed rpm : 750
rack travel mm : 13.20
Tolerance mm : + - 0.10
Del. quantity cm³/1000 strokes : 262.0
Tolerance cm³/1000 strokes : + - 2.0
Check tolerance cm³/1000S. : + - 5.0
Spread Tolerance
cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 162.0
Tolerance cm³/1000 strokes : + - 1.0
Check tolerance cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

Set starting CRT at K-cam.

Rated speed rpm : 100

rack travel mm : 13.70
Tolerance mm : + - 0.20
Del. quantity
cm³/1000 strokes : 158.0
Tolerance
cm³/1000 strokes : + - 15.0
Check tolerance
cm³/1000S. : + - 19.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 6.00
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spred
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.11.95
Test oil : ISO 4113

Combination No. : 0 403 476 096

Injection pump
Pump designation : PES6MW100/320RS1132
EP type number : 0 413 406 124

Governor
Governor design. : RSV650...750MW4A311
: -
Governor no. : 0 420 085 161

Cust. part No. :

Customer-spec. information

Customer : PENTA
Motor : TD 61 AG
Power KW : 93.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 2.95
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.55
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 122.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance cm³/1000S. : + 3.0
 Spread _____
 Tolerance cm³/1000 strokes : 3.5
 Check tolerance cm³/1000S. : 6.0

Rated speed rpm : 650
 Rack travel in mm : 6.20
 Tolerance mm : + 0.20
 Del. quantity cm³/1000 strokes : 19.0
 Tolerance cm³/1000 strokes : + 2.0
 Check tolerance cm³/1000S. : + 4.5
 Spread
 Tolerance cm³/1000 strokes : 3.5
 Check tolerance cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : + 0.35
 governor spring
 pre-tension
 click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
 Aneroid pressure hPa : -
 Del. quantity cm³/1000 strokes : 122.0
 Tolerance cm³/1000 strokes : + 1.0

Check tolerance cm³/1000S. : + 3.0
 Spread
 Tolerance cm³/1000 strokes : 3.5
 Check tolerance cm³/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 87.0
 tolerance degree : + 4.0
 RATED SPEED
 rack travel mm : 11.50
 Rated speed rpm : 751
 Tolerance 1/min : + 3
 rack travel mm : 4.00
 Rated speed rpm : 781
 Tolerance 1/min : + 8
 rack travel mm : 1.00
 Tolerance mm : + 0.70
 Rated speed rpm : 950
 rack travel mm : 4.00
 Rated speed rpm : 813
 Tolerance 1/min : + 8

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 748
 rack travel mm : 10.80
 Rated speed rpm : 778
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 rack travel mm : 1.00
 Tolerance mm : + 0.70
 Rated speed rpm : 950
 Rated speed rpm : 749
 rack travel mm : 10.80
 Rated speed rpm : 779
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 rack travel mm : 1.00
 Tolerance mm : + 0.70
 Rated speed rpm : 950
 Rated speed rpm : 750

rack travel mm : 10.80

Rated speed rpm : 780
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 950

Rated speed rpm : 751
rack travel mm : 10.80

Rated speed rpm : 781
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 950

Rated speed rpm : 752
rack travel mm : 10.80

Rated speed rpm : 782
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 950

Rated speed rpm : 753
rack travel mm : 10.80

Rated speed rpm : 783
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 950

LOW IDLE

control lever
position degree : 82.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 650
rack travel mm : 5.70
Tolerance mm : + 0.20

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 650
rack travel mm : 6.20
Tolerance mm : + 0.20

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.55
Tolerance mm : + 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + 1.00
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : + 10.0
Check tolerance
cm³/1000S. : + 13.0

LOW IDLE

Rated speed rpm : 650
Rack travel in mm : 6.20
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.01.92
Test oil : ISO 4113

Combination No. : 0 403 476 099

Injection pump
Pump designation : PES6MW100/320RS1209
EP type number : 0 413 406 200

Governor
Governor design. : RSV300...750MW1A802
Governor no. : 0 420 085 113

Cust. part No. : 3-7111

Customer-spec. information

Customer : MAN
Motor : D0826LE20
Power KW : 116.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 681 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 3.25
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Del. quantity
cm³/1000 strokes : 144.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 300

Rack travel in mm : 7.00

Tolerance mm : + - 0.40

Del. quantity
cm³/1000 strokes : 36.0

Tolerance
cm³/1000 strokes : + - 2.0

Check tolerance
cm³/1000S. : + - 4.5

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3

Rated speed rpm : 800

Rack travel in mm : 0.65

Tolerance mm : + - 0.35

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure

hPa : -

Del. quantity
cm³/1000 strokes : 144.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

control lever
position degree : 88.0

Tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 13.50

Rated speed rpm : 750

rack travel mm : 4.00

Rated speed rpm : 801

Tolerance 1/min : + - 4

rack travel mm : 1.00

Tolerance mm : + - 0.70

Rated speed rpm : 950

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750

rack travel mm : 13.50

Rated speed rpm : 801

Tolerance 1/min : + - 4

rack travel mm : 4.00

rack travel mm : 1.00

Tolerance mm : + - 0.70

Rated speed rpm : 950

Rated speed rpm : 751

rack travel mm : 13.50

Rated speed rpm : 802

Tolerance 1/min : + - 4

rack travel mm : 4.00

rack travel mm : 1.00

Tolerance mm : + - 0.70

Rated speed rpm : 950

Rated speed rpm : 752

rack travel mm : 13.50

Rated speed rpm : 803

Tolerance 1/min : + - 4

rack travel mm : 4.00

rack travel mm : 1.00

Tolerance mm : + - 0.70

Rated speed rpm : 950

Rated speed rpm : 753

rack travel mm : 13.50

Rated speed rpm : 804

Tolerance 1/min : + - 4

CONTROL LEVER

rack travel mm : 4.00
rack travel mm : 1.00
Tolerance mm : + - 0.70
Rated speed rpm : 950

Rated speed rpm : 754
rack travel mm : 13.50

Rated speed rpm : 805
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : + - 0.70
Rated speed rpm : 950

Rated speed rpm : 755
rack travel mm : 13.50

Rated speed rpm : 806
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : + - 0.70
Rated speed rpm : 950

LOW IDLE

control lever
position degree : 68.0
tolerance degree : + - 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.00
Tolerance mm : + - 0.40

rack travel mm : 2.00
Rated speed rpm : 340
Tolerance 1/min : + - 30

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 140.0

Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000S. : + - 13.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 7.00
Tolerance mm : + - 0.40
Del. quantity
cm³/1000 strokes : 36.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.5
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.06.94
Test oil : ISO 4113

Combination No. : 0 403 476 099A

Injection pump
Pump designation : PES6MW100/320RS1209
EP type number : 0 413 406 200

Governor
Governor design. : RSV300...900MW1A802
Governor no. : 0 420 085 113

Cust. part No. : 3-7112

Customer-spec. information
Customer : MAN
Motor : D0826LE20
Power KW : 141.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 681 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 3.25
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 15.00
Tolerance mm : + 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 14.85
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 149.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000s. : 7.5

Rated speed rpm : 300
Rack travel in mm : 7.00
Tolerance mm : ± 0.40
Del. quantity
cm³/1000 strokes : 36.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 4.5
Spred
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 2.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 149.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000s. : ± 4.0
Spred
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000s. : 7.5

CONTROL LEVER

control lever
position degree : 92.0
tolerance degree : ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 900
rack travel mm : 13.80
Rated speed rpm : 936
Tolerance 1/min : ± 4
rack travel mm : 4.00
rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 1050

Rated speed rpm : 901
rack travel mm : 13.80
Rated speed rpm : 937
Tolerance 1/min : ± 4
rack travel mm : 4.00
rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 1050

Rated speed rpm : 902
rack travel mm : 13.80
Rated speed rpm : 938
Tolerance 1/min : ± 4
rack travel mm : 4.00
rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 1050

Rated speed rpm : 903
rack travel mm : 13.80
Rated speed rpm : 939
Tolerance 1/min : ± 4
rack travel mm : 4.00
rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 1050

Rated speed rpm : 904

rack travel mm : 13.80

Rated speed rpm : 940

Tolerance 1/min : + 4

rack travel mm : 4.00

rack travel mm : 1.00

Tolerance mm : + 0.70

Rated speed rpm : 1050

Rated speed rpm : 905

rack travel mm : 13.80

Rated speed rpm : 941

Tolerance 1/min : + 4

rack travel mm : 4.00

rack travel mm : 1.00

Tolerance mm : + 0.70

Rated speed rpm : 1050

LOW IDLE

Tolerance

cm³/1000 strokes : + 10.0

Check tolerance

cm³/1000S. : + 13.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 7.00

Tolerance mm : + 0.40

Del. quantity

cm³/1000 strokes : 36.0

Tolerance

cm³/1000 strokes : + 2.0

Check tolerance

cm³/1000S. : + 4.5

Spread

Tolerance

cm³/1000 strokes : 6.0

Check tolerance

cm³/1000S. : 9.0

control Lever

position degree : 68.0

tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

Testing:

Rated speed rpm : 300

rack travel mm : 7.00

Tolerance mm : + 0.40

rack travel mm : 2.00

Rated speed rpm : 340

Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 850

rack travel mm : 14.85

Tolerance mm : + 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm³/1000 strokes : 140.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.03.98
Test oil : ISO 4113

Combination No. : 0 403 476 134

Injection pump
Pump designation : PES6MW100/320RS1236
EP type number : 0 413 406 231

Governor
Governor design. : RSV325...750MW1A802
: -3
Governor no. : 0 420 085 237

Cust. part No. : 3-7231

Customer-spec. information

Customer : MAN
Motor : D0826LXE20
Power KW : 151.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 681 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 3.25
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 15.00
Tolerance mm : + 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance *NW : + 0.75

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.70
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 192.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000s. : 7.5

Rated speed rpm : 325

 Rack travel in mm : 7.00
 Tolerance mm : + - 0.40
 Del. quantity
cm³/1000 strokes : 65.0
 Tolerance
cm³/1000 strokes : + - 2.0
 Check tolerance
cm³/1000s. : + - 4.5
 Spread
Tolerance
cm³/1000 strokes : 6.0
 Check tolerance
cm³/1000s. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
 Rated speed rpm : 800

Rack travel in mm : 0.65
 Tolerance mm : + - 0.35

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
 Aneroid pressure
hPa : -
 Del. quantity
cm³/1000 strokes : 192.0
 Tolerance
cm³/1000 strokes : + - 1.0
 Check tolerance
cm³/1000s. : + - 4.0
 Spread
Tolerance
cm³/1000 strokes : 4.0
 Check tolerance
cm³/1000s. : 7.5

CONTROL LEVER

control lever
position degree : 88.0
 tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 4.00
 Rated speed rpm : 784

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
 rack travel mm : 12.70

Rated speed rpm : 784
 Tolerance 1/min : + - 4
 rack travel mm : 4.00

rack travel mm : 1.00
 Tolerance mm : + - 0.70
 Rated speed rpm : 950

Rated speed rpm : 751
 rack travel mm : 12.70

Rated speed rpm : 785
 Tolerance 1/min : + - 4
 rack travel mm : 4.00

rack travel mm : 1.00
 Tolerance mm : + - 0.70
 Rated speed rpm : 950

Rated speed rpm : 752
 rack travel mm : 12.70

Rated speed rpm : 786
 Tolerance 1/min : + - 4
 rack travel mm : 4.00

rack travel mm : 1.00
 Tolerance mm : + - 0.70
 Rated speed rpm : 950

Rated speed rpm : 753
 rack travel mm : 12.70

Rated speed rpm : 787
 Tolerance 1/min : + - 4
 rack travel mm : 4.00

rack travel mm : 1.00
 Tolerance mm : + - 0.70

Rated speed rpm : 950
 Rated speed rpm : 754
 rack travel mm : 12.70
 Rated speed rpm : 788
 Tolerance 1/min : + 4
 rack travel mm : 4.00
 rack travel mm : 1.00
 Tolerance mm : + 0.70
 Rated speed rpm : 950
 Rated speed rpm : 755
 rack travel mm : 12.70
 Rated speed rpm : 789
 Tolerance 1/min : + 4
 rack travel mm : 4.00
 rack travel mm : 1.00
 Tolerance mm : + 0.70
 Rated speed rpm : 950

Tolerance
 cm³/1000 strokes : + 10.0
 Check tolerance
 cm³/1000S. : + 13.0

LOW IDLE

Rated speed rpm : 325
 Rack travel in mm : 7.00
 Tolerance mm : + 0.40
 Del. quantity
 cm³/1000 strokes : 65.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spread
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 9.0

LOW IDLE

control lever
 position degree : 68.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 325
 rack travel mm : 7.00
 Tolerance mm : + 0.40
 rack travel mm : 2.00
 Rated speed rpm : 340
 Tolerance 1/min : + 30

TORQUE CONTROL
 Rated speed rpm : 700
 rack travel mm : 13.70
 Tolerance mm : + 0.10

End of test specification sheet

STARTING FUEL DELIVERY

Rated speed rpm : 100
 Del. quantity
 cm³/1000 strokes : 215.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.03.98
Test oil : ISO 4113

Combination No. : 9 400 087 498

Injection pump
Pump designation : PES6P120A120RS3344
EP type number : 9 400 087 090

Governor
Governor design. : RQV350...11C0FA1216
Governor no. : 9 420 080 380

Cust. part No. : 3355978

Customer-spec. information

Customer : CUMMINS
Motor : 6 CTAA - 250
Power KW : 184.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 3.0

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.15
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 15.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance *NW : + 0.75

Start of delivery blocking

*NW after s.o.d. : 7.50
Tolerance : + 0.10
Check
tolerance *NW : + 0.23

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 14.55
Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 184.5
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0
 Rated speed rpm : 325
 Rack travel in mm : 6.40
 Tolerance mm : + - 0.10
 Del. quantity
 cm³/1000 strokes : 44.0
 Tolerance
 cm³/1000 strokes : + - 3.0
 Check tolerance
 cm³/1000S. : + - 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1177
 guide sleeve
 travel mm : 8.60
 Tolerance mm : + - 0.10
 Rated speed rpm : 325
 guide sleeve
 travel mm : 1.30
 Tolerance mm : + - 0.25
 Rated speed rpm : 860
 guide sleeve
 travel mm : 6.35
 Tolerance mm : + - 0.25
 Rated speed rpm : 1470
 guide sleeve
 travel mm : 11.50

Tolerance mm : + - 0.25

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1150

Rack travel in mm : 16.50
 Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 184.5
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 118.0
 tolerance degree : + - 6.0

RATED SPEED
 rack travel mm : 13.50
 Rated speed rpm : 1155
 Tolerance 1/min : + - 5

rack travel mm : 4.00
 Rated speed rpm : 1335
 Tolerance 1/min : + - 15

rack travel mm : 0.50
 Tolerance mm : + - 0.50
 Rated speed rpm : 1450

LOW IDLE

control lever
 position degree : 68.0

tolerance degree : + - 6.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT min. : > 9.50

Testing:

Rated speed rpm : 325
rack travel mm : 6.40
Tolerance mm : + - 0.10

Rated speed rpm : 500

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 14.55
Tolerance mm : + - 0.05

Rated speed rpm : 700
rack travel mm : 14.55
Tolerance mm : + - 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 14.55
Tolerance mm : + - 0.05

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 680
rack travel mm : 0.85
Tolerance mm : + - 0.15

Pressure hPa : 530
rack travel mm : 0.30
Tolerance mm : + - 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 245

Check speed 1/min : > 80
Check speed 1/min : < 265

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1000
Rated speed rpm : 700
Del. quantity cm³/1000 strokes : 184.0
Tolerance cm³/1000 strokes : + - 2.0
Check tolerance cm³/1000S. : + - 5.0

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 144.0
Tolerance cm³/1000 strokes : + - 1.0
Check tolerance cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + - 1.00
Del. quantity cm³/1000 strokes : 190.0
Tolerance cm³/1000 strokes : + - 10.0
Check tolerance cm³/1000S. : + - 14.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 6.40
Tolerance mm : + - 0.10
Del. quantity cm³/1000 strokes : 44.0
Tolerance cm³/1000 strokes : + - 3.0
Check tolerance cm³/1000S. : + - 6.0
Spread

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.03.98
Test oil : ISO 4113

Combination No. : 9 400 087 503

Injection pump
Pump designation : PES5P120A720LS7453
EP type number : F 000 400 203

Governor
Governor design. : RQV300...950PA1263
Governor no. : 9 420 080 392

Cust. part No. : 0270740102

Customer-spec. information

Customer : MBB
Motor : OM 449 LA-EUROII
Power KW : 205.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.3

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.70
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 21.00

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.55
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 247.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300
Rack travel in mm : 6.20
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 15.5
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 700
guide sleeve
travel mm : 5.45
Tolerance mm : + 0.25
Rated speed rpm : 1050
guide sleeve
travel mm : 7.80
Tolerance mm : + 0.10
Rated speed rpm : 300
guide sleeve
travel mm : 0.75
Tolerance mm : + 0.25
Rated speed rpm : 500
guide sleeve
travel mm : 3.55
Tolerance mm : + 0.25
Rated speed rpm : 1165
guide sleeve
travel mm : 9.45
Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1120

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 247.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : + 6.0

RATED SPEED
rack travel mm : 12.60
Rated speed rpm : 1030
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1130
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1220

LOW IDLE

control lever
position degree : 80.0
tolerance degree : + 6.0

Setting point w/out bumper spring

Rated speed rpm : 100
CRT mm min. : > 9.80

Testing:

Rated speed rpm : 300
rack travel mm : 6.20
Tolerance mm : + 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 13.55
Tolerance mm : + 0.05

Rated speed rpm : 600
rack travel mm : 13.75
Tolerance mm : + 0.05

Rated speed rpm : 800
rack travel mm : 13.75
Tolerance mm : + 0.05

Rated speed rpm : 900
rack travel mm : 13.65
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.80
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 400
rack travel mm : 0.85
Tolerance mm : + 0.15

Pressure hPa : 750
rack travel mm : 2.20
Tolerance mm : + 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check speed 1/min : > 80

Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 260.5
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
rack travel mm : 13.75
Tolerance mm : + 0.05
Del. quantity
cm³/1000 strokes : 253.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 140.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 264.0
Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000s. : + - 14.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.20
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 15.5
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000s. : + - 6.0
Spred
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.03.98
Test oil : ISO 4113

Combination No. : F 000 409 106

Injection pump
Pump designation : PES6P120A120RS7416
EP type number : 0 412 726 959

Governor
Governor design. : RQV400...1250PA1378K
Governor no. : F 000 420 503

Cust. part No. : 3933297

Customer-spec. information
Customer : CUMMINS
Motor : 6BTA-A
Power KW : 130.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.60
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

*NW after s.o.d. : 6.25
Tolerance : + 0.50
Check
tolerance *NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.65
Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 160.5
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0
 Rated speed rpm : 420
 Rack travel in mm : 6.00
 Tolerance mm : + - 0.10
 Del. quantity
 cm³/1000 strokes : 15.0
 Tolerance
 cm³/1000 strokes : + - 3.0
 Check tolerance
 cm³/1000S. : + - 5.0
 Spread
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1329
 guide sleeve
 travel mm : 7.83
 Tolerance mm : + - 0.15
 Rated speed rpm : 400
 guide sleeve
 travel mm : 1.44
 Tolerance mm : + - 0.20
 Rated speed rpm : 939
 guide sleeve
 travel mm : 5.18
 Tolerance mm : + - 0.25
 Rated speed rpm : 640
 guide sleeve
 travel mm : 3.56

Tolerance mm : + - 0.25
 Rated speed rpm : 1690
 guide sleeve
 travel mm : 11.50
 Tolerance mm : + - 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
 Aneroid pressure
 hPa : 800
 Del. quantity
 cm³/1000 strokes : 160.5
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

CONTROL LEVER

control lever
 position degree : 117.0
 tolerance degree : + - 6.0

RATED SPEED
 rack travel mm : 12.60
 Rated speed rpm : 1325
 Tolerance 1/min : + - 15

rack travel mm : 4.00
 Rated speed rpm : 1480
 Tolerance 1/min : + - 5

rack travel mm : 0.50
 Tolerance mm : + - 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
 position degree : 71.0
 tolerance degree : + - 6.0

Control lever difference
 Grad : 46.0
 tolerance degree : + - 6.0

Setting point w/out bumper spring

Rated speed rpm : 300
CRT mm min. : > 7.90

Testing:

Rated speed rpm : 420
rack travel mm : 6.00
Tolerance mm : + - 0.10

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 13.65
Tolerance mm : + - 0.05

Rated speed rpm : 800
rack travel mm : 11.85
Tolerance mm : + - 0.10

Rated speed rpm : 500
rack travel mm : 11.60
Tolerance mm : + - 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 800

Rated speed rpm : 1250
Pressure hPa : -
rack travel mm : 9.40
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 340
rack travel mm : 12.90
Tolerance mm : + - 0.30

Pressure hPa : 180
rack travel mm : 10.40
Tolerance mm : + - 0.20

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 280

Check speed 1/min : > 80
Check speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 800
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 131.5
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000C strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 11.60
Tolerance mm : + - 0.20

Aneroid pressure
hPa : -
Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 88.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

Set starting CRT at K-cam.

Rated speed rpm : 100
rack travel mm : 14.10
Tolerance mm : + - 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : + - 20.0
Check tolerance
cm³/1000S. : + - 25.0

LOW IDLE

Rated speed rpm : 420

Rack travel in mm : 6.00

Tolerance mm : + - 0.10

Del. quantity

cm³/1000 strokes : 15.0

Tolerance

cm³/1000 strokes : + - 3.0

Check tolerance

cm³/1000S. : + - 5.0

Speed

Tolerance

cm³/1000 strokes : 4.0

Check tolerance

cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.03.98
Test oil : ISO 4113

Combination No. : 0 400 464 105

Injection pump
Pump designation : PES4A80D320/3RS1301
EP type number : 0 410 484 016

Governor
Governor design. : RSV325...1500A2C505R
Governor no. : 0 420 233 187

Cust. part No. :

Customer-spec. information:
Customer : MWM
Motor : D226-4

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.0

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.25
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50
Check tolerance °NW : + 0.75

BASIC SETTING

Del. quantity
cm³/1000 strokes : 48.5

Tolerance
cm³/1000 strokes : + 0.5

Check tolerance
cm³/1000S. : + 2.0

Spread

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.0

Rated speed rpm : 325

Rack travel in mm : 7.00
 Tolerance mm : + - 0.10
 Del. quantity cm³/1000 strokes : 13.0
 Tolerance cm³/1000 strokes : + - 3.0
 Check tolerance cm³/1000S. : + - 4.5
 Spread
 Tolerance cm³/1000 strokes : 2.0
 Check tolerance cm³/1000S. : 3.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : + - 0.35

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1480
 Aneroid pressure hPa : -
 Del. quantity cm³/1000 strokes : 48.5
 Tolerance cm³/1000 strokes : + - 0.5
 Check tolerance cm³/1000S. : + - 2.0
 Spread
 Tolerance cm³/1000 strokes : 2.5
 Check tolerance cm³/1000S. : 4.0

CONTROL LEVER

control lever
 position degree : 55.0
 tolerance degree : + - 4.0

RATED SPEED
 rack travel mm : 8.00
 Rated speed rpm : 1525

Tolerance 1/min : + - 5
 rack travel mm : 4.00
 Rated speed rpm : 1560
 Tolerance 1/min : + - 15
 rack travel mm : 1.00
 Tolerance mm : + - 0.70
 Rated speed rpm : 1720
 rack travel mm : 4.00
 Rated speed rpm : 1570
 Tolerance 1/min : + - 15

LOW IDLE

control lever
 position degree : 16.0
 tolerance degree : + - 4.0
 Setting point w/out bumper spring
 Rated speed rpm : 325
 rack travel mm : 7.50
 Tolerance mm : + - 0.10

Testing:

Rated speed rpm : 325
 rack travel mm : 7.00
 Tolerance mm : + - 0.10
 rack travel mm : 2.00
 Rated speed rpm : 475
 Tolerance 1/min : + - 30

Start interlock

Rated speed rpm : > 100
 Check speed 1/min : > 80

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 20.25
 Tolerance mm : + - 0.75
 Del. quantity cm³/1000 strokes : 100.0

Tolerance
cm³/1000 strokes : + 5.0
Check tolerance
cm³/1000S. : + 8.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 7.00
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 4.5

Speed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 3.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.03.98
Test oil : ISO 4113

Combination No. : 0 400 846 443

Injection pump
Pump designation : PES6A90D410RS2596
EP type number : 0 410 896 073

Governor
Governor design. : RQV300...1400AB1066
: -1DL
Governor no. : 0 420 214 251

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM352A
Power KW : 126.0

TEST BENCH REQUIREMENTS

Inlet Line : 1.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.05
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 12.45
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 74.5

Tolerance
cm³/1000 strokes : + 0.5

Check tolerance
cm³/1000s. : + 2.5

Spread

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 4.5

Rated speed rpm : 300

Rack travel in mm : 9.00

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 5.0

Spread

Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1500

guide sleeve
travel mm : 8.55

Tolerance mm : + 0.05

Rated speed rpm : 300

guide sleeve
travel mm : 1.05

Tolerance mm : + 0.25

Rated speed rpm : 500

guide sleeve
travel mm : 2.55

Tolerance mm : + 0.25

Rated speed rpm : 750

guide sleeve
travel mm : 4.20

Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

control lever
position degree : - 1

Rated speed rpm : 1500

Rack travel in mm : 16.50

Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400

Aneroid pressure
hPa : 700

Del. quantity
cm³/1000 strokes : 74.5

Tolerance
cm³/1000 strokes : + 0.5

Check tolerance
cm³/1000S. : + 2.5

Spread

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 4.5

CONTROL LEVER

control lever
position degree : 114.0

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.40

Rated speed rpm : 1445

Tolerance 1/min. : + 5

rack travel mm : 4.00

Rated speed rpm : 1595

Tolerance 1/min. : + 15

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 1750

LOW IDLE

control lever
position degree : 76.0

tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 10.50

Testing:

Rated speed rpm : 300

rack travel mm : 9.00
Tolerance mm : + - 0.10

Rated speed rpm : 625

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 12.45
Tolerance mm : + - 0.05

Rated speed rpm : 700
rack travel mm : 13.75
Tolerance mm : + - 0.05

Rated speed rpm : 1000
rack travel mm : 13.40
Tolerance mm : + - 0.10

Rated speed rpm : 1200
rack travel mm : 12.75
Tolerance mm : + - 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 13.75
Tolerance mm : + - 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.35
Tolerance mm : + - 0.05

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 225
rack travel mm : 12.70
Tolerance mm : + - 0.10

Pressure hPa : 350
rack travel mm : 13.25
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check speed 1/min : > 80

Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 700
Rated speed rpm : 700
Del. quantity cm³/1000 strokes : 76.0
Tolerance cm³/1000 strokes : + - 2.0
Check tolerance cm³/1000S. : + - 4.5

rack travel mm : 13.40
Tolerance mm : + - 0.10

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 56.0
Tolerance cm³/1000 strokes : + - 1.0
Check tolerance cm³/1000S. : + - 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 15.60
Tolerance mm : + - 0.20
Del. quantity cm³/1000 strokes : 78.0
Tolerance cm³/1000 strokes : + - 5.0
Check tolerance cm³/1000S. : + - 8.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 9.00
Tolerance mm : + - 0.10
Del. quantity cm³/1000 strokes : 12.0
Tolerance cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000s. : + - 5.0
Spred
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000s. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.03.98
Test oil : ISO 4113

Combination No. : 0 402 066 716

Injection pump
Pump designation : PES6P110A120RS3397.,
EP type number : 0 412 016 758

Governor
Governor design. : RSV500...1000P2A690.
: .
Governor no. : 0 421 833 612

Cust. part No. : 3930530

Customer-spec. information

Customer : CDC
Motor : 6CTAA
Power KW : 151.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 3.60
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery blocking

*NW after s.o.d. : 8.25
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 1

Beginning of delivery difference
and maximum rack
travel : 15.00
Difference ° CS : 1.50

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.65
Tolerance mm : + - 0.05

Del. quantity
cm³/1000 strokes : 151.5

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 3.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 500

Rack travel in mm : 4.85
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 27.0

Tolerance
cm³/1000 strokes : + - 2.0

Check tolerance
cm³/1000S. : + - 4.5

Spred

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + - 0.20

governor spring
pre-tension
click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 151.5

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 3.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 95.0
tolerance degree : + - 4.0

RATED SPEED
rack travel mm : 10.60
Rated speed rpm : 1075
Tolerance 1/min : + - 5
Check
speed 1/min : + - 10

rack travel mm : 4.00
Rated speed rpm : 1150
Tolerance 1/min : + - 5
Check
speed 1/min : + - 10

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1275

rack travel mm : 4.00
Rated speed rpm : 1150
Tolerance 1/min : + - 15
Check
speed 1/min : + - 20

LOW IDLE

control lever
position degree : 78.0
tolerance degree : + 4.0

Control lever difference
Grad : 17.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 500
rack travel mm : 4.35

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 500
rack travel mm : 4.85
Tolerance mm : + 0.10

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.65
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 12.70
Tolerance mm : + 0.20

Rated speed rpm : 850
rack travel mm : 12.55
Tolerance mm : + 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.00
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 950
rack travel mm : 12.70
Tolerance mm : + 0.20

Pressure hPa : 850
rack travel mm : 12.30
Tolerance mm : + 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 184.5
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0

rack travel mm : 12.55
Tolerance mm : + 0.20

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 164.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : + 0.50
Del. quantity
cm³/1000 strokes : 157.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 25.0

LOW IDLE

Rated speed rpm : 500
Rack travel in mm : 4.85
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 27.0

Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000s. : + - 4.5
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000s. : 6.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.03.98
Test oil : ISO 4113

Combination No. : 0 402 746 643

Injection pump
Pump designation : PES6P120A320LS7362
EP type number : 0 412 726 929

Governor
Governor design. : RGV350...11COPA1201K
Governor no. : 0 421 815 456

Cust. part No. : 1824681C91

Customer-spec. information
Customer : NAVISTAR
Motor : DTA-530
Power KW : 245.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.8
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test L'ns : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 2.90
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 14.00
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 262.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.90
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 5.0

Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
 Aneroid pressure
hPa : 1700
 Del. quantity
cm³/1000 strokes : 262.5
 Tolerance
cm³/1000 strokes : + - 1.0
 Check tolerance
cm³/1000S. : + - 4.0
 Speed
Tolerance
cm³/1000 strokes : 8.0
 Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 121.0
tolerance degree : + - 6.0

RATED SPEED
rack travel mm : 13.00
Rated speed rpm : 1065
Tolerance 1/min : + - 15

rack travel mm : 4.00
 Rated speed rpm : 1175
 Tolerance 1/min : + - 5

rack travel mm : 0.50
 Tolerance mm : + - 0.50
 Rated speed rpm : 1225

LOW IDLE

control lever
position degree : 78.0
tolerance degree : + - 6.0

 Setting point w/out bumper spring

 Rated speed rpm : 275

 CRT mm min. : > 8.00

Testing:

Rated speed rpm : 350
 rack travel mm : 5.90
 Tolerance mm : + - 0.10

Rated speed rpm : 425

TORQUE CONTROL
 Rated speed rpm : 1000
 rack travel mm : 14.00
 Tolerance mm : + - 0.05

 Rated speed rpm : 650
 rack travel mm : 13.10
 Tolerance mm : + - 0.10

 Rated speed rpm : 750
 rack travel mm : 13.40
 Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1000
 Pressure hPa : 1700
 rack travel mm : 14.00
 Tolerance mm : + - 0.05

 Rated speed rpm : 1000
 Pressure hPa : -

rack travel mm : 10.55
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 1000

Pressure hPa : 1130
rack travel mm : 13.50
Tolerance mm : + - 0.20

Pressure hPa : 420
rack travel mm : 11.55
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 230

Check speed 1/min : > 80
Check speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1700
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 238.5
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 135.5
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.70
Tolerance mm : + - 0.50
Del. quantity
cm³/1000 strokes : 168.0
Tolerance
cm³/1000 strokes : + - 20.0
Check tolerance
cm³/1000S. : + - 25.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.90
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 5.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet.

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 18.03.98
Test oil : ISO 4113

Combination No. : 0 403 466 181

Injection pump
Pump designation : PES6MW100/120RS1238.
EP type number : 0 413 406 237

Governor
Governor design. : RSV500...1000M10A409
Governor no. : 0 420 085 300

Cust. part No. : 3930526

Customer-spec. information

Customer : CDC
Motor : 6 CT
Power KW : 133.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 2.80
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery blocking

*NW after s.o.d. : 7.50
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 1

Beginning of delivery difference
and maximum rack
travel : 15.00
Difference ° CS : 2.00

BASIC SETTINGRated speed rpm : 1000

Rack travel in mm : 11.25
Tolerance mm : + - 0.05Del. quantity cm³/1000 strokes : 130.5Tolerance cm³/1000 strokes : + - 1.0Check tolerance cm³/1000S. : + - 4.0

Spread

Tolerance cm³/1000 strokes : 4.0Check tolerance cm³/1000S. : 7.5

Rated speed rpm : 500

Rack travel in mm : 5.50
Tolerance mm : + - 0.10Del. quantity cm³/1000 strokes : 21.5Tolerance cm³/1000 strokes : + - 2.0Check tolerance cm³/1000S. : + - 4.5

Spread

Tolerance cm³/1000 strokes : 3.5Check tolerance cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITIONcontrol lever
position degree : - 3
Rated speed rpm : 800Rack travel in mm : 0.50
Tolerance mm : + - 0.20governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOPRated speed rpm : 1000
Aneroid pressure hPaDel. quantity cm³/1000 strokes : 1200Tolerance cm³/1000 strokes : + - 1.0Check tolerance cm³/1000S. : + - 4.0

Spread

Tolerance cm³/1000 strokes : 4.0Check tolerance cm³/1000S. : 7.5

CONTROL LEVERcontrol lever
position degree : 100.0
tolerance degree : + - 4.0**RATED SPEED**
rack travel mm : 10.25
Rated speed rpm : 1055
Tolerance 1/min : + - 5
Check speed 1/min : + - 15rack travel mm : 4.00
Rated speed rpm : 1160
Tolerance 1/min : + - 5
Check speed 1/min : + - 10rack travel mm : 1.00
Tolerance mm : + - 0.70
Rated speed rpm : 1250rack travel mm : 4.00
Rated speed rpm : 1160
Tolerance 1/min : + - 15
Check speed 1/min : + - 20

LOW IDLE

control lever
position degree : 83.0
tolerance degree : + - 4.0

Control lever difference
Grad : 17.0
tolerance degree : + - 6.0

Setting point w/out bumper spring

Rated speed rpm : 500
rack travel mm : 5.00
Tolerance mm : + - 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 500
rack travel mm : 5.50
Tolerance mm : + - 0.10

TORQUE CONTROL
Rated speed rpm : 1000
rack travel mm : 11.25
Tolerance mm : + - 0.05

Rated speed rpm : 700
rack travel mm : 12.85
Tolerance mm : + - 0.10

Rated speed rpm : 350
rack travel mm : 12.75
Tolerance mm : + - 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.95
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 880
rack travel mm : 12.40

Tolerance mm : + - 0.20
Pressure hPa : 600
rack travel mm : 11.40
Tolerance mm : + - 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200
Rated speed rpm : 850
rack travel mm : 12.75
Tolerance mm : + - 0.20
Del. quantity cm³/1000 strokes : 155.0
Tolerance cm³/1000 strokes : + - 2.0
Check tolerance cm³/1000S. : + - 5.0
Spread
Tolerance cm³/1000 strokes : 6.0
Check tolerance cm³/1000S. : 9.0

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 122.0
Tolerance cm³/1000 strokes : + - 1.0
Check tolerance cm³/1000S. : + - 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + - 1.00
Del. quantity cm³/1000 strokes : 177.0
Tolerance cm³/1000 strokes : + - 10.0
Check tolerance cm³/1000S. : + - 13.0

LOW IDLE

Rated speed rpm : 500

Rack travel in mm : 5.50
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 21.5
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.5
Spred
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.02.98
Test oil : ISO 4113

Combination No. : 0 401 806 045

Injection pump
Pump designation : PE6P120A300/3S131
EP type number : 0 401 806 045

Governor
Governor design. :
Governor no. :

Cust. part No. :

Customer-spec. information
Customer : ALLGEMEIN

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 1.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.05
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 21.00
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.05
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 499.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000s. : 9.0

Rated speed rpm : 1000
rack travel mm : 21.00

Rated speed rpm : 200

Rack travel in mm : 5.40
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 27.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000s. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 895.0
Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000s. : + - 13.0
Spread
Check tolerance
cm³/1000s. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 499.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000s. : + - 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 9.0

LOW IDLE

Rated speed rpm : 200

Rack travel in mm : 5.40
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 27.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000s. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

LOW IDLE

Testing:

Rated speed rpm : 200
rack travel mm : 5.40
Tolerance mm : + - 0.10

TORQUE CONTROL
Rated speed rpm : 1000
rack travel mm : 12.05
Tolerance mm : + - 0.05

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.12.93
Test oil : ISO 4113

Combination No. : 0 401 849 748

Injection pump
Pump designation : PE10P120A520/4LS3849
EP type number : 0 411 829 708

Governor
Governor design. : RQ750PA947
Governor no. : 0 421 801 513

Cust. part No. : 2-7975

Customer-spec. information

Customer : MAN
Motor : D2840 LE
Power KW : 352.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.25
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 10- 9- 4- 1- 8
: - 7- 6- 3- 5
: - 2

Phasing : 0-45-72-117-144
: -189-216-261-288
: -333

Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 10

BASIC SETTING

Del. quantity
cm³/1000 strokes : 230.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000s. : 9.0

Rated speed rpm : 300

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000s. : + 6.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000s. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 758
guide sleeve travel mm : 5.10
Tolerance mm : + 0.25

Rated speed rpm : 540
guide sleeve travel mm : -4.66
Tolerance mm : + 0.25

Rated speed rpm : 880
guide sleeve travel mm : 17.08
Tolerance mm : + 0.25

Rated speed rpm : 818
guide sleeve travel mm : 10.00
Tolerance mm : + 0.25

Rated speed rpm : 880
guide sleeve travel mm : 11.50
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure hPa : -

Del. quantity cm³/1000 strokes : 230.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000s. : 9.0

RATED SPEED

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 950

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 11.30

Rated speed rpm : 794
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 950

Rated speed rpm : 751
rack travel mm : 11.30

Rated speed rpm : 795
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 950

Rated speed rpm : 752
rack travel mm : 11.30

Rated speed rpm : 796
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50

Tolerance mm : + - 0.50
Rated speed rpm : 950

Rated speed rpm : 753
rack travel mm : 11.30

Rated speed rpm : 797
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 950

Rated speed rpm : 754
rack travel mm : 11.30

Rated speed rpm : 798
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 950

Rated speed rpm : 755
rack travel mm : 11.30

Rated speed rpm : 799
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 950

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.03.98
Test oil : ISO 4113

Combination No. : 0 401 856 701

Injection pump
Pump designation : PE6P110A721RS3101
EP type number : 0 411 816 725

Governor
Governor design. : RQV25C/1200FA413
Governor no. : 0 421 813 333

Cust. part No. :

Customer-spec. information

Customer : STEYR
Motor : WD615.67
Power KW : 206.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.05
Tolerance mm : + 0.05

Rated speed rpm : 250

Rack travel in mm : 5.90
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 15.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 5.5

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1256
guide sleeve travel mm : 7.59
Tolerance mm : + 0.25

Rated speed rpm : 250
guide sleeve travel mm : 0.64
Tolerance mm : + 0.25

Rated speed rpm : 1060
guide sleeve travel mm : 6.07
Tolerance mm : + 0.25

Rated speed rpm : 564
guide sleeve travel mm : 3.52
Tolerance mm : + 0.25

Rated speed rpm : 614
guide sleeve travel mm : 3.90
Tolerance mm : + 0.25

Rated speed rpm : 740
guide sleeve travel mm : 4.41
Tolerance mm : + 0.25

Rated speed rpm : 1441
guide sleeve travel mm : 10.00
Tolerance mm : + 0.25

Rated speed rpm : 1560
guide sleeve travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever position degree : - 1
Rated speed rpm : 1390

Rack travel in mm : 16.50
Tolerance mm : + 1.30

CONTROL LEVER

control lever position degree : 45.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 11.00
Rated speed rpm : 1245
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1350
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1450

LOW IDLE

control lever position degree : 13.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 7.50

Testing:

Rated speed rpm : 250
rack travel mm : 5.90
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 12.05
Tolerance mm : + 0.05

Rated speed rpm : 700
rack travel mm : 12.45
Tolerance mm : + 0.10

Rated speed rpm : 880
rack travel mm : 12.25
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 12.45
Tolerance mm : + - 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.10
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 330
rack travel mm : 10.80
Tolerance mm : + - 0.20

Pressure hPa : 420
rack travel mm : 11.55
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 170

Check speed 1/min : > 80
Check speed 1/min : < 190

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 167.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.0

rack travel mm : 12.25
Tolerance mm : + - 0.05

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 122.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 17.50
Tolerance mm : + - 0.20
Del. quantity
cm³/1000 strokes : 220.0
Tolerance
cm³/1000 strokes : + - 15.0
Check tolerance
cm³/1000S. : + - 19.0

LOW IDLE

Rated speed rpm : 250
Rack travel in mm : 5.90
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 5.5
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.12.93
Test oil : ISO 4113

Combination No. : 0 401 876 791

Injection pump
Pump designation : PE6P110A320LS3859
EP type number : 0 411 816 784

Governor
Governor design. : RSV400...1000P1A554
Governor no. : 0 421 833 376

Cust. part No. : 9273092

Customer-spec. information
Customer : LIEBHERR
Motor : D 9306 TI
Power KW : 200.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.65
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 6- 3- 5- 2-
: 4

Phasing : 0-75-120-195-240
: -315
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 14.55
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 196.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.5

Spred

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rack travel in mm : 6.00
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 14.5

Tolerance
cm³/1000 strokes : + 2.5

Check tolerance
cm³/1000S. : + 5.0

Spred

Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 196.0
Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.5

Spred
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 99.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 13.50
Rated speed rpm : 935
Toleranice 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1000
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1260

rack travel mm : 4.00
Rated speed rpm : 1030
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.70
Tolerance mm : + 0.10

Testing:

Rated speed rpm : 400
rack travel mm : 6.00
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 525
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm	:	900
rack travel mm	:	14.55
Tolerance mm	:	+ - 0.05
Rated speed rpm	:	500
rack travel mm	:	14.60
Tolerance mm	:	+ - 0.10
Rated speed rpm	:	350
rack travel mm	:	15.60
Tolerance mm	:	+ - 0.30

ANEROID/ALTITUDE COMPENSATOR TEST**SETTING**

Rated speed rpm	:	550
Pressure hPa	:	1300
rack travel mm	:	14.55
Tolerance mm	:	+ - 0.05
Rated speed rpm	:	550
Pressure hPa	:	-
rack travel mm	:	13.75
Tolerance mm	:	+ - 0.10

MEASUREMENT

Rated speed rpm	:	550
Pressure hPa	:	710
rack travel mm	:	14.05
Tolerance mm	:	+ - 0.05

FUEL DELIVERY CHARACTERISTICS

rack travel mm	:	15.60
Tolerance mm	:	+ - 0.30

Aneroid pressure hPa	:	-
Del. quantity cm ³ /1000 strokes	:	178.5
Tolerance cm ³ /1000 strokes	:	+ - 1.0
Check tolerance cm ³ /1000S.	:	+ - 3.5

STARTING FUEL DELIVERY

Rated speed rpm	:	100
Del. quantity cm ³ /1000 strokes	:	160.0
Tolerance cm ³ /1000 strokes	:	+ - 10.0
Check tolerance cm ³ /1000S.	:	+ - 14.0

LOW IDLE

Rack travel in mm	:	6.00
Tolerance mm	:	+ - 0.10
Del. quantity cm ³ /1000 strokes	:	14.5
Tolerance cm ³ /1000 strokes	:	+ - 2.5
Check tolerance cm ³ /1000S.	:	+ - 5.0
Spred		
Tolerance cm ³ /1000 strokes	:	4.5
Check tolerance cm ³ /1000S.	:	7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.07.93
Test oil : ISO 4113

Combination No. : 0 401 876 791B

Injection pump
Pump designation : PE6P110A320LS3859
EP type number : 0 411 816 784

Governor
Governor design. : RSV400...1000P1A554
Governor no. : 0 421 833 376

Cust. part No. : 9273092

Customer-spec. information

Customer : LIEBHERR
Motor : D 9306 TI
Power KW : 200.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.65
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 6- 3- 5- 2-
: 4

Phasing : 0-75-120-195-240
: -315
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 14.55
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 196.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.5

Spred

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rack travel in mm : 6.00

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 14.5

Tolerance
cm³/1000 strokes : + 2.5

Check tolerance
cm³/1000S. : + 5.0

Spred

Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3

Rated speed rpm : 800

Rack travel in mm : 0.50

Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 196.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.5

Spred

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 99.0

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.50

Rated speed rpm : 935

Tolerance 1/min : + 5

rack travel mm : 4.00

Rated speed rpm : 1000

Tolerance 1/min : + 15

rack travel mm : 0.85

Tolerance mm : + 0.55

Rated speed rpm : 1260

rack travel mm : 4.00

Rated speed rpm : 1030

Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 74.0

tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400

rack travel mm : 5.70

Tolerance mm : + 0.10

Testing:

Rated speed rpm : 400

rack travel mm : 6.00

Tolerance mm : + 0.10

rack travel mm : 2.00

Rated speed rpm : 480

Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm	:	900
rack travel mm	:	14.55
Tolerance mm	:	+ - 0.05
Rated speed rpm	:	500
rack travel mm	:	14.60
Tolerance mm	:	+ - 0.10
Rated speed rpm	:	350
rack travel mm	:	15.60
Tolerance mm	:	+ - 0.30

ANEROID/ALTITUDE COMPENSATOR TEST**SETTING**

Rated speed rpm	:	550
Pressure hPa	:	1300
rack travel mm	:	14.55
Tolerance mm	:	+ - 0.05
Rated speed rpm	:	550
Pressure hPa	:	-
rack travel mm	:	13.75
Tolerance mm	:	+ - 0.10

MEASUREMENT

Rated speed rpm	:	550
Pressure hPa	:	710
rack travel mm	:	14.05
Tolerance mm	:	+ - 0.05

FUEL DELIVERY CHARACTERISTICS

rack travel mm	:	15.60
Tolerance mm	:	+ - 0.30

Aneroid pressure

hPa	:	-
Del. quantity		
cm ³ /1000 strokes	:	178.5
Tolerance		
cm ³ /1000 strokes	:	+ - 1.0
Check tolerance		
cm ³ /1000S.	:	+ - 3.5

STARTING FUEL DELIVERY

Rated speed rpm	:	100
Del. quantity		
cm ³ /1000 strokes	:	160.0
Tolerance		
cm ³ /1000 strokes	:	+ - 10.0
Check tolerance		
cm ³ /1000S.	:	+ - 14.0

LOW IDLE

Rack travel in mm	:	6.00
Tolerance mm	:	+ - 0.10
Del. quantity		
cm ³ /1000 strokes	:	14.5
Tolerance		
cm ³ /1000 strokes	:	+ - 2.5
Check tolerance		
cm ³ /1000S.	:	+ - 5.0
Spred		
Tolerance		
cm ³ /1000 strokes	:	4.5
Check tolerance		
cm ³ /1000S.	:	7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.11.93
Test oil : ISO 4113

Combination No. : 0 401 878 717B

Injection pump
Pump designation : PE8P110A320LS3853-1.
EP type number : 0 411 818 726

Governor
Governor design. : RSV400...1000P1A554
Governor no. : 0 421 833 376

Cust. part No. : 9273967

Customer-spec. information
Customer : LIEBHERR
Motor : D 9308 T
Power KW : 255.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + - 1.0

Prestroke mm : 3.85
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 0.50

Firing order : 1- 8- 7- 2- 6
: - 3- 5- 4

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.50
Check tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.45
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 167.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 4.0

Spread

Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 7.5

Rack travel in mm : 6.00
 Tolerance mm : + - 0.10
 Del. quantity
 cm³/1000 strokes : 15.0
 Tolerance
 cm³/1000 strokes : + - 3.0
 Check tolerance
 cm³/1000S. : + - 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800

Rack travel in mm : 0.50
 Tolerance mm : + - 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 167.0
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 7.5

CONTROL LEVER

control lever
 position degree : 100.0
 tolerance degree : + - 4.0

RATED SPEED
 rack travel mm : 12.45
 Rated speed rpm : 945
 Tolerance 1/min : + - 5

rack travel mm : 4.00
 Rated speed rpm : 1000
 Tolerance 1/min : + - 15

rack travel mm : 0.85
 Tolerance mm : + - 0.55
 Rated speed rpm : 1100

rack travel mm : 4.00
 Rated speed rpm : 1030
 Tolerance 1/min : + - 15

LOW IDLE

control lever
 position degree : 79.0
 tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
 rack travel mm : 5.70
 Tolerance mm : + - 0.10

Testing:

Rated speed rpm : 400
 rack travel mm : 6.00
 Tolerance mm : + - 0.10

rack travel mm : 2.00
 Rated speed rpm : 450
 Tolerance 1/min : + - 30

TORQUE CONTROL

Rated speed rpm : 900
 rack travel mm : 13.45
 Tolerance mm : + - 0.05

Rated speed rpm : 500
 rack travel mm : 13.50
 Tolerance mm : + - 0.10

Rated speed rpm : 350
 rack travel mm : 14.90

Tolerance mm : + - 0.30

**ANEROID/ALTITUDE
COMPENSATOR TEST**

SETTING

Rated speed rpm : 550
Pressure hPa : 1500
rack travel mm : 13.45
Tolerance mm : + - 0.05

Rated speed rpm : 550
Pressure hPa : -
rack travel mm : 12.55
Tolerance mm : + - 0.10

MEASUREMENT

Rated speed rpm : 550
Pressure hPa : 620
rack travel mm : 12.80
Tolerance mm : + - 0.10

Pressure hPa : 685
rack travel mm : 13.20
Tolerance mm : + - 0.05

FUEL DELIVERY CHARACTERISTICS

rack travel mm : 14.90
Tolerance mm : + - 0.30

Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 153.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50

Tolerance mm : + - 0.50
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000S. : + - 14.0

LOW IDLE

Rack travel in mm : 6.00
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.03.98
Test oil : ISO 4113

Combination No. : 0 401 886 702

Injection pump
Pump designation : PE6P110A721RS3341
EP type number : 0 411 816 796

Governor
Governor design. : RSV400...1200P1A527
: -1
Governor no. : 0 421 833 455

Cust. part No. : 615.60.08.0039

Customer-spec. information

Customer : SNF
Motor : WD615.88
Power KW : 228.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 457 413 012

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 13.80
Tolerance mm : + 0.05

Del. quantity cm³/1000 strokes : 188.0

Tolerance _____
cm³/1000 strokes : + - 1.0

Check tolerance _____
cm³/1000S. : + - 4.0

Spred _____

Tolerance _____
cm³/1000 strokes : 4.0

Check tolerance _____
cm³/1000S. : 7.5

Rated speed rpm : 400

Rack travel in mm : 3.10
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 14.0

Tolerance
cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000S. : + - 5.5

Spred
Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + - 0.20

governor spring
pre-tension
click setting x : 4.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Spred
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 116.0
tolerance degree : + - 4.0

RATED SPEED
rack travel mm : 12.80
Rated speed rpm : 1245
Tolerance 1/min : + - 5

rack travel mm : 4.00
Rated speed rpm : 1300
Tolerance 1/min : + - 15

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 76.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 3.60
Tolerance mm : + - 0.10

Rated speed rpm : 100

CRT mm min. : > 9.50

Testing:

Rated speed rpm : 400
rack travel mm : 3.10
Tolerance mm : + - 0.10

rack travel mm : 2.00

Rated speed rpm : 465
Tolerance 1/min : + - 30

TORQUE CONTROL
Rated speed rpm : 1200
rack travel mm : 13.80
Tolerance mm : + - 0.05

Rated speed rpm : 700
rack travel mm : 13.80
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.80
Tolerance mm : + - 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.10
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 360
rack travel mm : 10.90
Tolerance mm : + - 0.20

Pressure hPa : 600
rack travel mm : 12.80
Tolerance mm : + - 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 198.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0

Aneroid pressure
hPa : -

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 123.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 5.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.30
Tolerance mm : + - 0.20
Del. quantity
cm³/1000 strokes : 205.0
Tolerance
cm³/1000 strokes : + - 15.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 3.10
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 5.5
Spread
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.03.98
Test oil : ISO 4113

Combination No. : 0 401 946 701

Injection pump
Pump designation : PE6P120A320RS3240
EP type number : 0 411 826 786

Governor
Governor design. : RQV250...1025PA371
Governor no. : 0 421 813 303

Cust. part No. : 8193548

Customer-spec. information

Customer : VOLVO-TRUCK
Motor : TD122FLs
Power KW : 240.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 457 413 046

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Del. quantity
cm³/1000 strokes : 252.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000s. : 9.0

Rated speed rpm : 250
 Rack travel in mm : 6.60
 Tolerance mm : + - 0.10
 Del. quantity cm³/1000 strokes : 20.0
 Tolerance cm³/1000 strokes : + - 2.5
 Check tolerance cm³/1000S. : + - 5.0
 Spread
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1100
 Rack travel in mm : 16.50
 Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
 Aneroid pressure hPa : 1200
 Del. quantity cm³/1000 strokes : 252.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Spread
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 65.0
 tolerance degree : + - 4.0

control lever
 position degree : 120.0

tolerance degree : + - 4.0
RATED SPEED
 rack travel mm : 12.65
 Rated speed rpm : 1070
 Tolerance 1/min : + - 5
 rack travel mm : 4.00
 Tolerance 1/min : + - 15
 rack travel mm : 0.50
 Tolerance mm : + - 0.50
 Rated speed rpm : 1250

LOW IDLE

control lever
 position degree : 64.0
 tolerance degree : + - 4.0
 control lever
 position degree : 9.0
 tolerance degree : + - 4.0
 Setting point w/out bumper spring
 Rated speed rpm : 100

Testing:

Rated speed rpm : 250
 rack travel mm : 6.60
 Tolerance mm : + - 0.10
 Rated speed rpm : 315

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 1200
 rack travel mm : 13.65
 Tolerance mm : + - 0.05
 Rated speed rpm : 500
 Pressure hPa : -
 rack travel mm : 9.70
 Tolerance mm : + - 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 780
rack travel mm : 3.30
Tolerance mm : + - 0.10

Pressure hPa : 90
rack travel mm : 0.25
Tolerance mm : + - 0.05

End of test specification sheet

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000s. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + - 0.50
Del. quantity
cm³/1000 strokes : 290.0
Tolerance
cm³/1000 strokes : + - 20.0
Check tolerance
cm³/1000s. : + - 24.0

LOW IDLE

Rated speed rpm : 250
Rack travel in mm : 6.60
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : + - 2.5
Check tolerance
cm³/1000s. : + - 5.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 7.0

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.02.95
Test oil : ISO 4113

Combination No. : 0 402 046 351

Injection pump
Pump designation : PES6P120A320RS533
EP type number : 0 412 026 062

Governor
Governor design. : RQ275/1050PA1083
Governor no. : 0 421 801 690

Cust. part No. : CCEP 5 13&A 66-210

Customer-spec. information

Customer : RVI
Motor : M1HS062045 B
Power KW : 186.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder assembly : 1 688 901 105

Opening pressure bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 1

CRT ZERO POSITION

Rack travel in mm : 10.95
Tolerance mm : + 0.05

BASIC SETTING

Rated speed rpm : 700
Del. quantity cm³/1000 strokes : 160.0
Tolerance cm³/1000 strokes : + 1.0
Check tolerance cm³/1000S. : + 4.0
Spread _____
Tolerance cm³/1000 strokes : 5.0
Check tolerance cm³/1000S. : 9.0

Rated speed rpm : 275
Rack travel in mm : -5.50
Tolerance mm : + 0.10
Del. quantity cm³/1000 strokes : 25.0
Tolerance cm³/1000 strokes : + 2.0
Check tolerance cm³/1000S. : + 5.0
Spread _____
Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1116
guide sleeve travel mm : 6.38
Tolerance mm : + 0.10
Rated speed rpm : 250
guide sleeve travel mm : 1.17
Tolerance mm : + 0.10
Rated speed rpm : 1050

guide sleeve travel mm : 6.00
Tolerance mm : + 0.20
Rated speed rpm : 480
guide sleeve travel mm : 3.89
Tolerance mm : + 0.20
Rated speed rpm : 740
guide sleeve travel mm : 6.00
Tolerance mm : + 0.20
Rated speed rpm : 1360
guide sleeve travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever position degree : 109
Rated speed rpm : 850
Rack travel in mm : 20.00
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 160.0
Tolerance cm³/1000 strokes : + 1.0
Check tolerance cm³/1000S. : + 4.0
Spread _____
Tolerance cm³/1000 strokes : 5.0
Check tolerance cm³/1000S. : 9.0

RATED SPEED
rack travel mm : -1.00
Rated speed rpm : 1120
Tolerance 1/min : + 8

rack travel mm : -6.90
Rated speed rpm : 1230
Tolerance 1/min : + 15

rack travel mm : -10.45
Tolerance mm : + 0.55

Rated speed rpm : 1350

Pressure hPa : 160
rack travel mm : -0.85
Tolerance mm : + 0.05

LOW IDLE

control lever position degree : 252.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : < -4.70

Testing:

Rated speed rpm : 275
rack travel mm : -5.50
Tolerance mm : + 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 700

Rated speed rpm : 1050
Tolerance mm : + 0.10

Rated speed rpm : 1050
rack travel mm : 0.50
Tolerance mm : + 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : -1.20
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 180
rack travel mm : -0.45
Tolerance mm : + 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 195

Check speed 1/min : > 80
Check speed 1/min : < 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1000
Rated speed rpm : 1050
Del. quantity cm³/1000 strokes : 156.0
Tolerance cm³/1000 strokes : + 3.0
Check tolerance cm³/1000S. : + 6.0

rack travel mm : 0.50
Tolerance mm : + 0.20

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 103.0
Tolerance cm³/1000 strokes : + 1.0
Check tolerance cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Del. quantity cm³/1000 strokes : 160.0
Tolerance cm³/1000 strokes : + 15.0
Check tolerance cm³/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : -5.50

Tolerance mm : + - 0.10

Del. quantity

cm³/1000 strokes : 25.0

Tolerance

cm³/1000 strokes : + - 2.0

Check tolerance

cm³/1000S. : + - 5.0

Spread

Tolerance

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.03.98
Test oil : ISO 4113

Combination No. : 0 402 066 706

Injection pump
Pump designation : PES6P120A120RS3358
EP type number : 0 412 026 784

Governor
Governor design. : RSV475...1250P2A613
: -1
Governor no. : 0 421 833 505

Cust. part No. : 3927357

Customer-spec. information

Customer : CDC
Motor : 6BTA-590 ELITE
Power KW : 138.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery blocking

*NW after s.o.d. : 7.75
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.30
Tolerance mm : + 0.05

Del. quantity cm³/1000 strokes : 140.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 3.0
 Spread
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 7.5

 Rated speed rpm : 475
 Rack travel in mm : 5.40
 Tolerance mm : + - 0.10
 Del. quantity cm³/1000 strokes : 21.0
 Tolerance cm³/1000 strokes : + - 2.0
 Check tolerance cm³/1000S. : + - 4.5
 Spread
 Tolerance cm³/1000 strokes : 6.0
 Check tolerance cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : + - 0.20
 governor spring
 pre-tension
 click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure hPa : 1500
 Del. quantity cm³/1000 strokes : 140.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 3.0
 Spread
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 7.5

CONTROL LEVER

control lever
 position degree : 107.0
 tolerance degree : + - 4.0
 RATED SPEED
 rack travel mm : 10.30
 Rated speed rpm : 1295
 Tolerance 1/min : + - 5
 rack travel mm : 4.00
 Rated speed rpm : 1365
 Tolerance 1/min : + - 15
 rack travel mm : 0.85
 Tolerance mm : + - 0.55
 Rated speed rpm : 1500
 rack travel mm : 4.00
 Rated speed rpm : 1375
 Tolerance 1/min : + - 15

LOW IDLE

control lever
 position degree : 83.0
 tolerance degree : + - 4.0
 Setting point w/out bumper spring
 Rated speed rpm : 475
 rack travel mm : 4.90
 Tolerance mm : + - 0.10

Testing:

Rated speed rpm : 475
 rack travel mm : 5.40
 Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 595
Tolerance 1/min : + 30

TORQUE CONTROL
Rated speed rpm : 1250
rack travel mm : 11.30
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 11.30
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 11.30
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.00
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 10.75
Tolerance mm : + 0.20

Pressure hPa : 560
rack travel mm : 9.55
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 157.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spread

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 97.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : + 0.75
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 25.0

LOW IDLE

Rated speed rpm : 475
Rack travel in mm : 5.40
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.03.98
Test oil : ISO 4113

Combination No. : 0 402 066 712

Injection pump
Pump designation : PES6P120A120RS3358
EP type number : 0 412 026 784

Governor
Governor design. : RSV475...1200P2A675
Governor no. : 0 421 833 594

Cust. part No. : 3283573

Customer-spec. information

Customer : CDC
Motor : 6BTA-590 ELITE
Power KW : 138.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 100
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery blocking

*NW after s.o.d. : 7.75
Tolerance : + 0.50
Check tolerance *NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 11.30
 Tolerance mm : + - 0.05
 Del. quantity cm³/1000 strokes : 140.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 3.0
 Spread
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 7.5

Rated speed rpm : 485
 Rack travel in mm : 5.30
 Tolerance mm : + - 0.10
 Del. quantity cm³/1000 strokes : 21.0
 Tolerance cm³/1000 strokes : + - 2.0
 Check tolerance cm³/1000S. : + - 4.5
 Spread
 Tolerance cm³/1000 strokes : 6.0
 Check tolerance cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION
 control lever position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : + - 0.20
 governor spring pre-tension click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP
 Rated speed rpm : 1200
 Aneroid pressure hPa : 1500
 Del. quantity cm³/1000 strokes : 140.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 3.0
 Spread
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 7.5

CONTROL LEVER

control lever position degree : 104.0
 tolerance degree : + - 4.0
 RATED SPEED
 rack travel mm : 10.30
 Rated speed rpm : 1265
 Tolerance 1/min : + - 5
 rack travel mm : 4.00
 Rated speed rpm : 1345
 Tolerance 1/min : + - 15
 rack travel mm : 0.85
 Tolerance mm : + - 0.55
 Rated speed rpm : 1475
 rack travel mm : 4.00
 Rated speed rpm : 1355
 Tolerance 1/min : + - 15

LOW IDLE

control lever position degree : 82.0
 tolerance degree : + - 4.0
 Setting point w/out bumper spring
 Rated speed rpm : 485
 rack travel mm : 4.80
 Tolerance mm : + - 0.10

Testing:

Rated speed rpm : 485
rack travel mm : 5.30
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 605
Tolerance 1/min : + - 30

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 11.30
Tolerance mm : + - 0.05

Rated speed rpm : 750
rack travel mm : 11.30
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 11.30
Tolerance mm : + - 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.00
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 10.90
Tolerance mm : + - 0.20

Pressure hPa : 560
rack travel mm : 9.55
Tolerance mm : + - 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 157.0

Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance

cm³/1000S. : + - 6.0
Spread

Tolerance
cm³/1000 strokes : 8.0
Check tolerance

cm³/1000S. : + - 12.0

Aneroid pressure

hPa : -
Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 97.0

Tolerance
cm³/1000 strokes : + - 2.0

Check tolerance
cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25

Tolerance mm : + - 0.75
Del. quantity

cm³/1000 strokes : 170.0
Tolerance

cm³/1000 strokes : + - 20.0
Check tolerance

cm³/1000S. : + - 25.0

LOW IDLE

Rated speed rpm : 485

Rack travel in mm : 5.30
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 21.0

Tolerance
cm³/1000 strokes : + - 2.0

Check tolerance
cm³/1000S. : + - 4.5

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 17.03.98
Test oil : ISO 4113

Combination No. : 0 402 086 705

Injection pump
Pump designation : PES6P100B321RS3388
EP type number : 0 412 006 714

Governor
Governor design. : RSV400...1125POA694
Governor no. : 0 421 833 617

Cust. part No. : 51.10100-7606

Customer-spec. information

Customer : MAN
Motor : D0826 LE527
Power KW : 169.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.30
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 13.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery blocking

Tolerance : + 0.10
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 925

Rack travel in mm : 13.90
Tolerance mm : + - 0.05

Del. quantity
cm³/1000 strokes : 169.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 400

Rack travel in mm : 4.80
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000S. : + - 6.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3

governor spring
pre-tension
click setting x : 5.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 925

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 169.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.0

RATED SPEED
rack travel mm : 12.10

Rated speed rpm : 1175

Tolerance 1/min : + - 5

rack travel mm : 0.85

Tolerance mm : + - 0.55

Rated speed rpm : 1400

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 400

rack travel mm : 4.30

Tolerance mm : + - 0.10

Testing:

Rated speed rpm : 400

rack travel mm : 4.80

Tolerance mm : + - 0.10

TORQUE CONTROL
Rated speed rpm : 925

rack travel mm : 13.90

Tolerance mm : + - 0.05

Rated speed rpm : 1125

rack travel mm : 13.10

Tolerance mm : + - 0.10

Rated speed rpm : 700

rack travel mm : 14.00

Tolerance mm : + - 0.10

Rated speed rpm : 1000

rack travel mm : 13.70

Tolerance mm : + - 0.10

**ANEROID/ALTITUDE
COMPENSATOR TEST**

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 14.00
Tolerance mm : + - 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.50
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 150
rack travel mm : 10.00
Tolerance mm : + - 0.05

Pressure hPa : 800
rack travel mm : 13.20
Tolerance mm : + - 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1125
Del. quantity
cm³/1000 strokes : 146.5
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
rack travel mm : 14.00
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 180.5
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.50
Tolerance mm : + - 0.20
Del. quantity
cm³/1000 strokes : 112.0
Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000S. : + - 14.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 4.80
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.11.94
Test oil : ISO 4113

Combination No. : 0 402 646 605A

Injection pump
Pump designation : PE6P130A720RS7197
EP type number :

Governor
Governor design. : RQV300...1000PA946
: -2
Governor no. :

Cust. part No. :

Customer-spec. information
Customer : IVECO-UNIC
Motor : 8210.22.800
Power KW : 224.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.30

Tolerance mm : + - 0.05
 Del. quantity cm³/1000 strokes : 191.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Speed
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 8.0
 Rated speed rpm : 300
 Rack travel in mm : 5.20
 Tolerance mm : + - 0.10
 Del. quantity cm³/1000 strokes : 22.0
 Tolerance cm³/1000 strokes : + - 3.0
 Check tolerance cm³/1000S. : + - 7.0
 Speed
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1045
 guide sleeve travel mm : 8.40
 Tolerance mm : + - 0.15
 Rated speed rpm : 300
 guide sleeve travel mm : 1.20
 Tolerance mm : + - 0.20
 Rated speed rpm : 700
 guide sleeve travel mm : 5.20
 Tolerance mm : + - 0.25
 Rated speed rpm : 400

guide sleeve travel mm : 2.60
 Tolerance mm : + - 0.25
 Rated speed rpm : 1350
 guide sleeve travel mm : 11.50
 Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

control lever position degree : - 1
 Rated speed rpm : 1130
 Rack travel in mm : 10.90
 Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
 Aneroid pressure hPa : 900
 Del. quantity cm³/1000 strokes : 191.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Speed
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 8.0

CONTROL LEVER

control lever position degree : 116.0
 tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 10.90
 Rated speed rpm : 1045
 Tolerance 1/min : + - 5

rack travel mm : 4.00
 Rated speed rpm : 1145
 Tolerance 1/min : + - 15

rack travel mm : 0.50
 Tolerance mm : + - 0.50
 Rated speed rpm : 1350

rack travel mm : 4.00

Pressure hPa : 320
rack travel mm : 10.65
Tolerance mm : + - 0.05

LOW IDLE

control lever
position degree : 64.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 6.70

Testing:

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 410
Tolerance 1/min : + - 20

Rated speed rpm : 470

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.30
Tolerance mm : + - 0.05

Rated speed rpm : 550
rack travel mm : 11.30
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 11.20
Tolerance mm : + - 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.20
Tolerance mm : + - 0.10

MEASUREMENT

Rated speed rpm : 500

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 162.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated,
rack must reach start position in max.
control lever setting.

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : + - 20.0
Check tolerance
cm³/1000S. : + - 24.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.20
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 22.0

Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 7.0
Spred
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 02.01.97
Test oil : ISO 4113

Combination No. : 0 402 646 649

Injection pump
Pump designation : PE6P130A720RS7339
EP type number : 0 412 636 833

Governor
Governor design. : RQV300...950PA905-1
Governor no. : 0 421 814 097

Cust. part No. :

Customer spec. information
Customer : IVECO-AIFO
Motor : 8210.SRI
Power KW : 353.0

TEST BENCH REQUIREMENTS

Inlet Line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 14.00
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Check
tolerance °NW : + 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.95
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 338.0

Tolerance _____
 cm³/1000 strokes : + 1.0
 Check tolerance _____
 cm³/1000S. : + 4.0
 Spread _____
 Tolerance _____
 cm³/1000 strokes : 8.0
 Check tolerance _____
 cm³/1000S. : 12.0
 Rated speed rpm : 300
 Rack travel in mm : 4.70
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 24.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 7.0
 Spread
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1000
 guide sleeve
 travel mm : 7.75
 Tolerance mm : + 0.15
 Rated speed rpm : 300
 guide sleeve
 travel mm : 1.81
 Tolerance mm : + 0.20
 Rated speed rpm : 409
 guide sleeve
 travel mm : 2.86
 Tolerance mm : + 0.25
 Rated speed rpm : 459
 guide sleeve
 travel mm : 3.29
 Tolerance mm : + 0.25

Rated speed rpm : 720
 guide sleeve
 travel mm : 4.94
 Tolerance mm : + 0.25
 Rated speed rpm : 1260
 guide sleeve
 travel mm : 11.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1090
 Rack travel in mm : 12.90
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 338.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

CONTROL LEVER

control lever
 position degree : 114.0
 tolerance degree : + 4.0

RATED SPEED
 rack travel mm : 12.90
 Rated speed rpm : 995
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1115
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1200

rack travel mm : 4.00

LOW IDLE

control lever
position degree : 65.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 6.20

Testing:

Rated speed rpm : 300
rack travel mm : 4.70
Tolerance mm : + 0.10

Rated speed rpm : 430

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 13.95
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 13.95
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.40
Tolerance mm : + 0.15

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 350
rack travel mm : 10.75
Tolerance mm : + 0.10

Pressure hPa : 520
rack travel mm : 12.95
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100

Check speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 196.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated,
rack must reach start position in max.
control lever setting.

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 24.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 4.70
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 7.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 23.03.98
Test oil : ISO 4113

Combination No. : 0 402 646 670

Injection pump
Pump designation : PE6P120A320RS7438
EP type number : 0 412 626 965

Governor
Governor design. : RQV275...1150PA1296K
Governor no. : 0 421 815 523

Cust. part No. : 1316183

Customer-spec. information

Customer : DAF
Motor : PF 235 M
Power KW : 230.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.85
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 13.50
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 259.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.00
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 16.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1201
guide sleeve

travel mm : 10.07
Tolerance mm : + 0.15

Rated speed rpm : 275
guide sleeve

travel mm : 1.71
Tolerance mm : + 0.20

Rated speed rpm : 811
guide sleeve

travel mm : 6.79
Tolerance mm : + 0.25

Rated speed rpm : 450

guide sleeve
travel mm : 3.85
Tolerance mm : + 0.25

Rated speed rpm : 1480
guide sleeve

travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1321

Rack travel in mm : 12.25
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure

hPa : 1500
Del. quantity

cm³/1000 strokes : 259.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 119.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.20
Rated speed rpm : 1185

Tolerance 1/min : + 5
Check

speed 1/min : + 10

rack travel mm : 4.00
Rated speed rpm : 1310

Tolerance 1/min : + 15
Check

speed 1/min : + 20

rack travel mm : 0.70

Tolerance mm : \pm 0.70
Rated speed rpm : 1450

LOW IDLE

control lever position degree : 70.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175
CRT mm min. : > 7.60

Testing:

Rated speed rpm : 275
rack travel mm : 5.00
Tolerance mm : \pm 0.10

Rated speed rpm : 395

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 13.50
Tolerance mm : \pm 0.05

Rated speed rpm : 1130
rack travel mm : 13.20
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 13.35
Tolerance mm : \pm 0.10

Rated speed rpm : 800
rack travel mm : 13.45
Tolerance mm : \pm 0.10

Rated speed rpm : 650
rack travel mm : 12.70
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 11.90
Tolerance mm : \pm 0.10

Rated speed rpm : 1150
rack travel mm : 13.20
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 875
Pressure hPa : 1500
rack travel mm : 13.50
Tolerance mm : \pm 0.10

Rated speed rpm : 875
Pressure hPa : -
rack travel mm : 9.15
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 875
Pressure hPa : 450
rack travel mm : 12.10
Tolerance mm : \pm 0.05

Pressure hPa : 150
rack travel mm : 9.80
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1130
Del. quantity
cm³/1000 strokes : 232.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 13.35
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 170.0

Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

LOW IDLE

Rated speed rpm : 275
Rack travel in mm : 5.00
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.03.98
Test oil : ISO 4113

Combination No. : 0 402 646 681

Injection pump
Pump designation : PE6P120A320RS7412
EP type number : 0 412 626 953

Governor
Governor design. : RQV275...1000PA1381K
Governor no. : 0 421 815 561

Cust. part No. : 1349846/0

Customer-spec. information

Customer : DAF
Motor : XF 250
Power KW : 250.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05

Rack travel in mm : 11.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.10
Check
tolerance °NW : + 0.70

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 11.50
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 250.0

Tolerance _____
 cm³/1000 strokes : + 1.0
 Check tolerance _____
 cm³/1000S. : + 4.0
 Spread _____
 Tolerance _____
 cm³/1000 strokes : 8.0
 Check tolerance _____
 cm³/1000S. : 13.0

 Rated speed rpm : 275
 Rack travel in mm : 3.90
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 17.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1055
 guide sleeve
 travel mm : 7.47
 Tolerance mm : + 0.15
 Rated speed rpm : 275
 guide sleeve
 travel mm : 2.04
 Tolerance mm : + 0.20
 Rated speed rpm : 820
 guide sleeve
 travel mm : 5.14
 Tolerance mm : + 0.25
 Rated speed rpm : 480
 guide sleeve
 travel mm : 3.34
 Tolerance mm : + 0.25

Rated speed rpm : 1282
 guide sleeve
 travel mm : 12.00
 Tolerance mm : + 0.25
 Rated speed rpm : 1370
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1263
 Rack travel in mm : 10.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
 Aneroid pressure
 hPa : 1500
 Del. quantity
 cm³/1000 strokes : 250.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 13.0

CONTROL LEVER

control lever
 position degree : 110.0
 tolerance degree : + 4.0

RATED SPEED
 rack travel mm : 10.50
 Rated speed rpm : 1045
 Tolerance 1/min : + 5
 Check
 speed 1/min : + 10
 rack travel mm : 4.00
 Rated speed rpm : 1130
 Tolerance 1/min : + 15
 Check
 speed 1/min : + 20
 rack travel mm : 0.70
 Tolerance mm : + 0.70
 Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 175
CRT mm min. : > 7.00

Testing:

Rated speed rpm : 275
rack travel mm : 3.90
Tolerance mm : + 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 11.50
Tolerance mm : + 0.10

Rated speed rpm : 900
rack travel mm : 11.70
Tolerance mm : + 0.10

Rated speed rpm : 750
rack travel mm : 12.00
Tolerance mm : + 0.05

Rated speed rpm : 700
rack travel mm : 12.00
Tolerance mm : + 0.10

Rated speed rpm : 600
rack travel mm : 11.50
Tolerance mm : + 0.10

Rated speed rpm : 500
rack travel mm : 11.00
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST**SETTING**

Rated speed rpm : 775
Pressure hPa : 1500

rack travel mm : 12.00
Tolerance mm : + 0.10

Rated speed rpm : 775
Pressure hPa : 460
rack travel mm : 11.00
Tolerance mm : + 0.05

MEASUREMENT

Rated speed rpm : 775
Pressure hPa : -
rack travel mm : 8.30
Tolerance mm : + 0.20

Pressure hPa : 250
rack travel mm : 9.30
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1500
Rated speed rpm : 750
rack travel mm : 12.00
Tolerance mm : + 0.05
Del. quantity cm³/1000 strokes : 289.0
Tolerance cm³/1000 strokes : + 2.0
Check tolerance cm³/1000S. : + 6.0
Spread
Tolerance cm³/1000 strokes : 10.0
Check tolerance cm³/1000S. : 15.0

Aneroid pressure hPa : -
Rated speed rpm : 600
Del. quantity cm³/1000 strokes : 188.0
Tolerance cm³/1000 strokes : + 1.0
Check tolerance cm³/1000S. : + 4.0
Spread
Tolerance cm³/1000 strokes : 10.0
Check tolerance cm³/1000S. : 15.0

LOW IDLE

Rated speed rpm : 275
Rack travel in mm : 3.90
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000s. : + 6.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 04.12.92
Test oil : ISO 4113

Combination No. : 0 402 648 854

Injection pump
Pump designation : PE8P130A920/5LS7822.
EP type number : 0 412 638 802

Governor
Governor design. : RQV300...950PA905
Governor no. : 0 421 813 723

Cust. part No. :

Customer-spec. information
Customer : IVECO-FIAT
Motor : 8280.42.001

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 688 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.15
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 8- 4- 3- 6
: - 5- 7- 2

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 11.45
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 222.0

Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000s. : + 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000s. : 12.0
 Rated speed rpm : 300
 Rack travel in mm : 5.00
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 27.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000s. : + 7.0
 Spread
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000s. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 950
 guide sleeve
 travel mm : 7.30
 Tolerance mm : + 0.10
 Rated speed rpm : 225
 guide sleeve
 travel mm : 0.85
 Tolerance mm : + 0.25
 Rated speed rpm : 600
 guide sleeve
 travel mm : 4.10
 Tolerance mm : + 0.30
 Rated speed rpm : 350
 guide sleeve
 travel mm : 2.30
 Tolerance mm : + 0.20
 Rated speed rpm : 1200

guide sleeve
 travel mm : 11.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1020
 Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
 Aneroid pressure
 hPa : 900
 Del. quantity
 cm³/1000 strokes : 222.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000s. : + 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000s. : 12.0

CONTROL LEVER

control lever
 position degree : 113.0
 tolerance degree : + 4.0

RATED SPEED
 rack travel mm : 10.40
 Rated speed rpm : 1000
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1095
 Tolerance 1/min : + 15
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1200
 rack travel mm : 4.00

LOW IDLE

control lever
position degree : 67.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 6.50

Testing:

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : + 0.10

Rated speed rpm : 430

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 11.45
Tolerance mm : + 0.05

Rated speed rpm : 950
rack travel mm : 11.40
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 11.45
Tolerance mm : - 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.45
Tolerance mm : + 0.15

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 330
rack travel mm : 9.90
Tolerance mm : + 0.10

Pressure hPa : 390
rack travel mm : 10.95
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100

Check speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 218.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 162.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 24.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.00
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 27.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 7.0
Spread

Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 06.08.93
Test oil : ISO 4113

Combination No. : 0 402 648 912

Injection pump
Pump designation : PE8P130A920/5LS7841.
EP type number : 0 412 638 803

Governor
Governor design. : RQV300...950PA994K
Governor no. : 0 421 815 275

Cust. part No. :

Customer-spec. information

Customer : IVECO-FIAT
Motor : 3280.42.050

TEST BENCH REQUIREMENTS

Inlet Line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 12.00
Tolerance mm : + 0.50

Firing order : 1- 8- 4- 3- 6
: - 5- 7- 2

Phasing : 0-45-90-135-180
: -225-270-315

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 10.55
 Tolerance mm : \pm 0.05
 Del. quantity cm³/1000 strokes : 215.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Speed
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0
 Rated speed rpm : 300
 Rack travel in mm : 4.20
 Tolerance mm : \pm 0.10
 Del. quantity cm³/1000 strokes : 25.0
 Tolerance cm³/1000 strokes : \pm 3.0
 Check tolerance cm³/1000S. : \pm 6.0
 Speed
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 700
 guide sleeve travel mm : 6.20
 Tolerance mm : \pm 0.30
 Rated speed rpm : 995
 guide sleeve travel mm : 9.70
 Tolerance mm : \pm 0.15
 Rated speed rpm : 500
 guide sleeve travel mm : 4.40
 Tolerance mm : \pm 0.30

Rated speed rpm : 300
 guide sleeve travel mm : 2.60
 Tolerance mm : \pm 0.20

Rated speed rpm : 1250
 guide sleeve travel mm : 13.50
 Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever position degree : - 1
 Rated speed rpm : 1080
 Rack travel in mm : 9.40
 Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
 Aneroid pressure hPa : 900
 Del. quantity cm³/1000 strokes : 215.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Speed
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

CONTROL LEVER

control lever position degree : 112.0
 tolerance degree : \pm 4.0
 RATED SPEED
 rack travel mm : 9.40
 Rated speed rpm : 995
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00
 Rated speed rpm : 1050
 Tolerance 1/min : \pm 15
 rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1200

rack travel mm : 4.00

LOW IDLE

control lever
position degree : 62.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 5.70

Testing:

Rated speed rpm : 300
rack travel mm : 4.20
Tolerance mm : + - 0.10

Rated speed rpm : 230

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 10.55
Tolerance mm : + - 0.05

Rated speed rpm : 950
rack travel mm : 10.50
Tolerance mm : + - 0.10

Rated speed rpm : 700
rack travel mm : 10.55
Tolerance mm : + - 0.15

Rated speed rpm : 350
rack travel mm : 10.15
Tolerance mm : + - 0.15

Rated speed rpm : 550
rack travel mm : 8.00
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 950
Pressure hPa : 900
rack travel mm : 10.55
Tolerance mm : + - 0.05

Rated speed rpm : 950
Pressure hPa : -
rack travel mm : 7.40
Tolerance mm : + - 0.10

MEASUREMENT

Rated speed rpm : 950
Pressure hPa : 260
rack travel mm : 8.20
Tolerance mm : + - 0.10

Pressure hPa : 360
rack travel mm : 9.75
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 217.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0

rack travel mm : 10.55
Tolerance mm : + - 0.15

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : + - 5.0
Check tolerance
cm³/1000S. : + - 8.0
Spread
Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : + - 15.0
Check tolerance
cm³/1000S. : + - 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 4.20
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.09.93
Test oil : ISO 4113

Combination No. : 0 402 648 958

Injection pump
Pump designation : PE8P120A320LS7863
EP type number : 0 412 628 874

Governor
Governor design. : RQV300...1050PA1056
: -K
Governor no. : 0 421 815 341

Cust. part No. : 0240743302

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 105
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 14.00
Tolerance mm : + 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1050

 Rack travel in mm : 14.05
 Tolerance mm : + - 0.05

 Del. quantity cm³/1000 strokes : 258.0

 Tolerance cm³/1000 strokes : + - 1.0

 Check tolerance cm³/1000S. : + - 4.0

 Speed

 Tolerance cm³/1000 strokes : 6.0

 Check tolerance cm³/1000S. : 9.0

 Rated speed rpm : 300

 Rack travel in mm : 5.80
 Tolerance mm : + - 0.10
 Del. quantity cm³/1000 strokes : 19.0
 Tolerance cm³/1000 strokes : + - 3.0
 Check tolerance cm³/1000S. : + - 6.0
 Speed
 Tolerance cm³/1000 strokes : 6.0
 Check tolerance cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1106
 guide sleeve travel mm : 8.96
 Tolerance mm : + - 0.10

 Rated speed rpm : 300
 guide sleeve travel mm : 1.85
 Tolerance mm : + - 0.10

 Rated speed rpm : 850

guide sleeve travel mm : 5.60
 Tolerance mm : + - 0.25

Rated speed rpm : 347
 guide sleeve travel mm : 2.72
 Tolerance mm : + - 0.25

Rated speed rpm : 397
 guide sleeve travel mm : 3.26
 Tolerance mm : + - 0.25

Rated speed rpm : 530
 guide sleeve travel mm : 3.77
 Tolerance mm : + - 0.25

Rated speed rpm : 1219
 guide sleeve travel mm : 12.00
 Tolerance mm : + - 0.25

Rated speed rpm : 1300
 guide sleeve travel mm : 13.50
 Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

control lever position degree : - 1
 Rated speed rpm : 1180

Rack travel in mm : 13.00
 Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
 Aneroid pressure hPa : -
 Del. quantity cm³/1000 strokes : 253.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Speed
 Tolerance cm³/1000 strokes : 6.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 119.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 13.00
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1170
Tolerance 1/min : \pm 15

rack travel mm : 0.75
Tolerance mm : \pm 0.75
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 75.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 7.70

Testing:

Rated speed rpm : 300
rack travel mm : 5.80
Tolerance mm : \pm 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 14.05
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 14.45
Tolerance mm : \pm 0.10

Rated speed rpm : 850
rack travel mm : 14.60
Tolerance mm : \pm 0.10

Rated speed rpm : 750

rack travel mm : 14.20
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 13.90
Tolerance mm : \pm 0.10

Rated speed rpm : 650
rack travel mm : 13.70
Tolerance mm : \pm 0.10

Rated speed rpm : 550
rack travel mm : 13.50
Tolerance mm : \pm 0.10

**ANEROID/ALTITUDE
COMPENSATOR TEST****SETTING**

Rated speed rpm : 850
Pressure hPa : 1200
rack travel mm : 14.70
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 7.95
Tolerance mm : \pm 0.15

MEASUREMENT

Rated speed rpm : 850
Pressure hPa : 150
rack travel mm : 8.90
Tolerance mm : \pm 0.10

Pressure hPa : 550
rack travel mm : 12.40
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

rack travel mm : 14.60

Tolerance mm : + - 0.10

Aneroid pressure

hPa : -
Rated speed rpm : 750
Del. quantity cm³/1000 strokes : 262.0
Tolerance cm³/1000 strokes : + - 2.0
Check tolerance cm³/1000S. : + - 5.0
Spread
Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

Aneroid pressure

hPa : -
Rated speed rpm : 550
Del. quantity cm³/1000 strokes : 256.0
Tolerance cm³/1000 strokes : + - 3.0
Check tolerance cm³/1000S. : + - 6.0
Spread
Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

Aneroid pressure

hPa : -
Rated speed rpm : 400
Del. quantity cm³/1000 strokes : 204.5
Tolerance cm³/1000 strokes : + - 1.5
Check tolerance cm³/1000S. : + - 4.5

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 133.0
Tolerance cm³/1000 strokes : + - 1.0
Check tolerance cm³/1000S. : + - 4.0
Spread
Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.60
Tolerance mm : + - 0.40
Del. quantity cm³/1000 strokes : 130.0
Tolerance cm³/1000 strokes : + - 10.0
Check tolerance cm³/1000S. : + - 14.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.80
Tolerance mm : + - 0.10
Del. quantity cm³/1000 strokes : 19.0
Tolerance cm³/1000 strokes : + - 3.0
Check tolerance cm³/1000S. : + - 6.0
Spread
Tolerance cm³/1000 strokes : 6.0
Check tolerance cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.09.94
Test oil : ISO 4113

Combination No. : 0 402 735 816

Injection pump
Pump designation : PES5P120A720/3LS7310
: -1
EP type number : 0 412 725 820

Governor
Governor design. : RQ325/1000PA1106-1
Governor no. : 0 421 801 700

Cust. part No. : 51.11103-7391

Customer-spec. information

Customer : MAN
Motor : D2865LUH06
Power KW : 191.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.15
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 12.80
Tolerance mm : + 0.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 5

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 10.80

Tolerance mm : + - 0.05
 Del. quantity cm³/1000 strokes : 235.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Spread
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

Rated speed rpm : 325
 Rack travel in mm : 4.90
 Tolerance mm : + - 0.10
 Del. quantity cm³/1000 strokes : 43.0
 Tolerance cm³/1000 strokes : + - 3.0
 Check tolerance cm³/1000S. : + - 6.0
 Spread
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1071
 guide sleeve travel mm : 7.35
 Tolerance mm : + - 0.10

Rated speed rpm : 325
 guide sleeve travel mm : 2.50
 Tolerance mm : + - 0.10

Rated speed rpm : 1000
 guide sleeve travel mm : 7.01
 Tolerance mm : + - 0.10

Rated speed rpm : 777

guide sleeve travel mm : 7.01
 Tolerance mm : + - 0.10
 Rated speed rpm : 408
 guide sleeve travel mm : 4.50
 Tolerance mm : + - 0.10
 Rated speed rpm : 530
 guide sleeve travel mm : 7.00
 Tolerance mm : + - 0.10
 Rated speed rpm : 1220
 guide sleeve travel mm : 11.50
 Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

control lever position degree : 109
 Rated speed rpm : 700
 Rack travel in mm : 15.50
 Tolerance mm : + - 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
 Aneroid pressure hPa : 750
 Del. quantity cm³/1000 strokes : 235.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Spread
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 100.0
 tolerance degree : + - 4.0

RATED SPEED
 rack travel mm : 11.10
 Rated speed rpm : 1053
 Tolerance 1/min : + - 8

rack travel mm : 4.00
Rated speed rpm : 1130
Tolerance 1/min : + - 15

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 75.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 8.00

Testing:

Rated speed rpm : 325
rack travel mm : 4.90
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : + - 20

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 10.80
Tolerance mm : + - 0.05

Rated speed rpm : 750
rack travel mm : 12.20
Tolerance mm : + - 0.10

Rated speed rpm : 1000
rack travel mm : 12.20
Tolerance mm : + - 0.10

Rated speed rpm : 1000
rack travel mm : 12.60
Tolerance mm : + - 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 750
rack travel mm : 10.80
Tolerance mm : + - 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.50
Tolerance mm : + - 0.10

2-stage LDA setting

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 11.05

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 250
rack travel mm : 8.75
Tolerance mm : + - 0.05

Pressure hPa : 500
rack travel mm : 10.05
Tolerance mm : + - 0.15

Pressure hPa : 1250
rack travel mm : 11.65
Tolerance mm : + - 0.15

Pressure hPa : 2000
rack travel mm : 12.10
Tolerance mm : + - 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 264.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000s. : + - 5.0

Aneroid pressure
hPa : 2000
Rated speed rpm : 1000
rack travel mm : 12.20
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 244.0

Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 159.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.50
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 75.0
Tolerance
cm³/1000 strokes : + 10.0
Check tolerance
cm³/1000S. : + 14.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 4.90
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 43.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 18.08.97
Test oil : ISO 4113

Combination No. : 0 402 736 810

Injection pump
Pump designation : PES6P110A120RS7213
EP type number : 0 412 716 804

Governor
Governor design. : RQV400...1250PA964
: -2K
Governor no. : 0 421 815 254

Cust. part No. : 3921777

Customer-spec. information
Customer : CDC
Motor : 68TA-A
Power KW : 141.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 120
Tolerance l/h : ± 5.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.40
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 6.00
Tolerance : ± 0.50
Check tolerance *NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 14.85
Tolerance mm : + - 0.05Del. quantity
cm³/1000 strokes : 163.0Tolerance
cm³/1000 strokes : + - 1.0Check tolerance
cm³/1000S. : + - 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 400

Rack travel in mm : 5.50
Tolerance mm : + - 0.10Del. quantity
cm³/1000 strokes : 36.0Tolerance
cm³/1000 strokes : + - 3.0Check tolerance
cm³/1000S. : + - 5.0

Spread

Tolerance
cm³/1000 strokes : 8.0Check tolerance
cm³/1000S. : 12.0

**(B) SETTING OF INJECTION PUMP
WITH GOVERNOR**

GUIDE SLEEVE TRAVELRated speed rpm : 1300
guide sleeve
travel mm : 7.30
Tolerance mm : + - 0.10Rated speed rpm : 325
guide sleeve
travel mm : 0.90

Tolerance mm : + - 0.20

Rated speed rpm : 600
guide sleeve
travel mm : 3.10
Tolerance mm : + - 0.20Rated speed rpm : 400
guide sleeve
travel mm : 1.50
Tolerance mm : + - 0.10Rated speed rpm : 1500
guide sleeve
travel mm : 9.30
Tolerance mm : + - 0.20

GUIDE SLEEVE POSITION

Rated speed rpm : 1450

Rack travel in mm : 13.80
Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOPRated speed rpm : 1250
Aneroid pressure
hPa : 1200Del. quantity
cm³/1000 strokes : 163.0Tolerance
cm³/1000 strokes : + - 1.0Check tolerance
cm³/1000S. : + - 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0Check tolerance
cm³/1000S. : 9.0

CONTROL LEVERcontrol lever
position degree : 63.0
tolerance degree : + - 4.0control lever
position degree : 119.0
tolerance degree : + - 4.0

RATED SPEEDrack travel mm : 13.80
Rated speed rpm : 1300

Tolerance 1/min : + - 5

rack travel mm : 4.00
Rated speed rpm : 1475
Tolerance 1/min : + - 15

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 71.0
tolerance degree : + - 4.0

control lever
position degree : 15.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 275

CRT mm min. : > 7.20

Testing:

Rated speed rpm : 400
rack travel mm : 5.50
Tolerance mm : + - 0.10

Rated speed rpm : 423

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 14.85
Tolerance mm : + - 0.05

Rated speed rpm : 800
rack travel mm : 13.10
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1200
rack travel mm : 14.85
Tolerance mm : + - 0.05

Rated speed rpm : 1250
Pressure hPa : -

rack travel mm : 8.50
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 690
rack travel mm : 13.40
Tolerance mm : + - 0.20

Pressure hPa : 365
rack travel mm : 10.25
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 290

Check
speed 1/min : > 80
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 161.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 97.5
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.50
Tolerance mm : + 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000s. : + 25.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 5.50
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 36.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000s. : + 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.03.98
Test oil : ISO 4113

Combination No. : 0 402 736 862AA

Injection pump
Pump designation : PES6P110A120RS7214
EP type number : 0 412 716 805

Governor
Governor design. : RQV350...1200PA964
: -30K
Governor no. : 0 421 815 432

Cust. part No. : 3282470

Customer-spec. information

Customer : CUMMINS
Motor : 6CTA-A
Power KW : 213.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 120
Tolerance l/h : + 5.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 23.0
Tolerance bar : + 1.0

Prestroke mm : 4.40
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery blocking

*NW after s.o.d. : 6.00
Tolerance : + 0.10
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.90
 Tolerance mm : + - 0.05
 Del. quantity cm³/1000 strokes : 186.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Spread
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

Rated speed rpm : 300
 Rack travel in mm : 6.50
 Tolerance mm : + - 0.10
 Del. quantity cm³/1000 strokes : 43.0
 Tolerance cm³/1000 strokes : + - 3.0
 Check tolerance cm³/1000S. : + - 5.0
 Spread
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1269
 guide sleeve travel mm : 9.75
 Tolerance mm : + - 0.25
 Rated speed rpm : 300
 guide sleeve travel mm : 1.76
 Tolerance mm : + - 0.25
 Rated speed rpm : 829
 guide sleeve travel mm : 6.79
 Tolerance mm : + - 0.25

Rated speed rpm : 322
 guide sleeve travel mm : 1.98
 Tolerance mm : + - 0.25
 Rated speed rpm : 372
 guide sleeve travel mm : 2.75
 Tolerance mm : + - 0.25
 Rated speed rpm : 460
 guide sleeve travel mm : 3.76
 Tolerance mm : + - 0.25
 Rated speed rpm : 1630
 guide sleeve travel mm : 13.50
 Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

control lever position degree : - 1
 Rated speed rpm : 1400
 Rack travel in mm : 12.90
 Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
 Aneroid pressure hPa : 1000
 Del. quantity cm³/1000 strokes : 186.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Spread
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 60.0
 tolerance degree : + - 4.0
 control lever position degree : 112.0

tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 13.65
Rated speed rpm : 1150
Tolerance 1/min : + - 5

rack travel mm : 4.00
Rated speed rpm : 1360
Tolerance 1/min : + - 15

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 66.0
tolerance degree : + - 4.0

control lever
position degree : 14.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.65

Testing:

Rated speed rpm : 300
rack travel mm : 6.50
Tolerance mm : + - 0.10

Rated speed rpm : 423

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 13.90
Tolerance mm : + - 0.05

Rated speed rpm : 700
rack travel mm : 12.90
Tolerance mm : + - 0.35

Rated speed rpm : 1100
rack travel mm : 14.60
Tolerance mm : + - 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1200
rack travel mm : 14.60
Tolerance mm : + - 0.05

Rated speed rpm : 1100
Pressure hPa : -
rack travel mm : 8.50
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 1100
Pressure hPa : 675
rack travel mm : 14.30
Tolerance mm : + - 0.20

Pressure hPa : 340
rack travel mm : 10.40
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure

hPa : -
Rated speed rpm : 1100
rack travel mm : 14.60
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 185.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 104.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

Set starting CRT at K-cam.

Rated speed rpm : 100
rack travel mm : 11.20
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : + - 20.0
Check tolerance
cm³/1000S. : + - 25.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.50
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 43.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 19.03.98
Test oil : ISO 4113

Combination No. : 0 402 736 888

Injection pump
Pump designation : PES6P120A120RS7390
EP type number : 0 412 726 945

Governor

Governor design. : RQV350...1100PA1237K
Governor no. : 0 421 815 475

Cust. part No. : 3283278

Customer-spec. information

Customer : CUMMINS
Motor : 6CTAA
Power KW : 162.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 110
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 008
Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.30
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery blocking

*NW after s.o.d. : 7.70
Tolerance : + 0.10
Check tolerance *NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.30
Tolerance mm : + - 0.05

Del. quantity
cm³/1000 strokes : 164.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000s. : + - 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000s. : 9.0

Rated speed rpm : 350

Rack travel in mm : 4.80
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000s. : + - 5.0

Spred

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000s. : 11.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1159
guide sleeve
travel mm : 10.27
Tolerance mm : + - 0.15

Rated speed rpm : 350
guide sleeve
travel mm : 1.93
Tolerance mm : + - 0.20

Rated speed rpm : 710
guide sleeve
travel mm : 5.79
Tolerance mm : + - 0.25

Rated speed rpm : 420

guide sleeve
travel mm : 4.28
Tolerance mm : + - 0.25

Rated speed rpm : 1380

guide sleeve
travel mm : 13.50
Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1

Rated speed rpm : 1200

Rack travel in mm : 12.30
Tolerance mm : + - 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 164.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000s. : + - 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000s. : 9.0

CONTROL LEVER

control lever
position degree : 69.0

tolerance degree : + - 4.0

control lever
position degree : 123.0

tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 12.30

Rated speed rpm : 1145

Tolerance 1/min : + - 5

rack travel mm : 4.00

Rated speed rpm : 1240

Tolerance 1/min : + - 15

Check
 speed 1/min : + 20
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever
 position degree : 73.0
 tolerance degree : + 4.0

control lever
 position degree : 21.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : > 7.70

Testing:

Rated speed rpm : 350
 rack travel mm : 4.80
 Tolerance mm : + 0.10

Rated speed rpm : 350

TORQUE CONTROL
 Rated speed rpm : 1100
 rack travel mm : 13.30
 Tolerance mm : + 0.05

Rated speed rpm : 750
 rack travel mm : 12.95
 Tolerance mm : + 0.10

Rated speed rpm : 900
 rack travel mm : 13.05
 Tolerance mm : + 0.15

Rated speed rpm : 600
 rack travel mm : 12.70
 Tolerance mm : + 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
 Pressure hPa : 1500
 rack travel mm : 13.30
 Tolerance mm : + 0.05

Rated speed rpm : 1100
 Pressure hPa : -
 rack travel mm : 10.60
 Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 1100
 Pressure hPa : 170
 rack travel mm : 11.80
 Tolerance mm : + 0.20

Pressure hPa : 330
 rack travel mm : 12.80
 Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
 Rated speed rpm : < 280

Check
 speed 1/min : > 80
 Check
 speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1500
 Rated speed rpm : 750
 Del. quantity
 cm³/1000 strokes : 155.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000s. : + 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 12.0
 Check tolerance
 cm³/1000s. : 16.0

rack travel mm : 13.05
 Tolerance mm : + 0.15

Aneroid pressure
 hPa : -
 Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + - 0.50
Del. quantity
cm³/1000 strokes : 185.0
Tolerance
cm³/1000 strokes : + - 20.0
Check tolerance
cm³/1000S. : + - 24.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 4.80
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 5.0
Spred
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 19.03.98
Test oil : ISO 4113

Combination No. : 0 402 736 889AA

Injection pump
Pump designation : PES6P120A120RS7390
EP type number :

Governor
Governor design. : RQV350...1100PA1244K
Governor no. :

Cust. part No. : 3282739

Customer-spec. information

Customer : CUMMINS
Motor : 5CTAA
Power KW : 179.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 90
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.30
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery blocking

*NW after s.o.d. : 7.70
Tolerance : + 0.10
Check
tolerance *NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.70
Tolerance mm : + - 0.05

Del. quantity
cm³/1000 strokes : 173.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 4.60
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000S. : + - 5.0

Spred

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 173.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

rack travel mm : 12.70

Rated speed rpm : 1145

Tolerance 1/min : + - 5

Check
speed 1/min : + - 20

rack travel mm : 0.50

Tolerance mm : + - 0.50

Rated speed rpm : 1350

LOW IDLE

Testing:

Rated speed rpm : 350

rack travel mm : 4.60

Tolerance mm : + - 0.10

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1100

rack travel mm : 13.70

Tolerance mm : + - 0.05

Rated speed rpm : 700

rack travel mm : 13.85

Tolerance mm : + - 0.10

Rated speed rpm : 500

rack travel mm : 12.95

Tolerance mm : + - 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 700

Pressure hPa : 1500

rack travel mm : 13.20

Tolerance mm : + 0.10
Rated speed rpm : 700
Pressure hPa : -
rack travel mm : 10.10
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 700
Pressure hPa : 400
rack travel mm : 11.10
Tolerance mm : + 0.20
Pressure hPa : 600
rack travel mm : 12.60
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 290
Check speed 1/min : > 80
Check speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1500
Rated speed rpm : 700
Del. quantity cm³/1000 strokes : 171.0
Tolerance cm³/1000 strokes : + 3.0
Check tolerance cm³/1000S. : + 6.0
Spread
Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

rack travel mm : 12.95
Tolerance mm : + 0.15

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 104.5

Tolerance cm³/1000 strokes : + 2.0
Check tolerance cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity cm³/1000 strokes : 190.0
Tolerance cm³/1000 strokes : + 20.0
Check tolerance cm³/1000S. : + 24.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 4.60
Tolerance mm : + 0.10
Del. quantity cm³/1000 strokes : 18.0
Tolerance cm³/1000 strokes : + 3.0
Check tolerance cm³/1000S. : + 5.0
Spread
Tolerance cm³/1000 strokes : 7.0
Check tolerance cm³/1000S. : 11.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.03.98
Test oil : ISO 4113

Combination No. : 0 402 736 893

Injection pump
Pump designation : PES6P120A120RS7400
EP type number : 0 412 726 950

Governor
Governor design. : RQV350...1100PA1244
: -2K
Governor no. : 0 421 815 489

Cust. part No. : 3282609

Customer-spec. information

Customer : CUMMINS
Motor : 6CTAA
Power KW : 206.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 125
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quart.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.30
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery blocking

*NW after s.o.d. : 8.00
Tolerance : + 0.10
Check
tolerance *NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 15.50
Tolerance mm : + - 0.05

Del. quantity
cm³/1000 strokes : 211.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350
Rack travel in mm : 5.50
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 5.0
Speed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1159
guide sleeve
travel mm : 10.28
Tolerance mm : + - 0.15

Rated speed rpm : 350
guide sleeve
travel mm : 1.93
Tolerance mm : + - 0.20

Rated speed rpm : 710
guide sleeve
travel mm : 5.79

Tolerance mm : + - 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 4.70
Tolerance mm : + - 0.25

Rated speed rpm : 1380
guide sleeve
travel mm : 13.50
Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1215

Rack travel in mm : 13.30
Tolerance mm : + - 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 211.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 66.0
tolerance degree : + - 4.0

control lever
position degree : 122.0
tolerance degree : + - 4.0

RATED SPEED
rack travel mm : 14.50
Rated speed rpm : 1145
Tolerance 1/min : + - 5

rack travel mm : 4.00
Rated speed rpm : 1260

Tolerance 1/min : + 15
Check speed 1/min : + 20

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 73.0
tolerance degree : + 4.0

control lever
position degree : 20.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : > 8.60

Testing:

Rated speed rpm : 350
rack travel mm : 5.50
Tolerance mm : + 0.10

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 15.50
Tolerance mm : + 0.05

Rated speed rpm : 650
rack travel mm : 15.00
Tolerance mm : + 0.10

Rated speed rpm : 900
rack travel mm : 15.40
Tolerance mm : + 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1050
Pressure hPa : 1500
rack travel mm : 15.50

Tolerance mm : + 0.05

Rated speed rpm : 1050
Pressure hPa : -
rack travel mm : 11.05
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 1050
Pressure hPa : 820
rack travel mm : 14.15
Tolerance mm : + 0.20

Pressure hPa : 420
rack travel mm : 12.10
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 280

Check speed 1/min : > 80
Check speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1500
Rated speed rpm : 650
Del. quantity cm³/1000 strokes : 197.0
Tolerance cm³/1000 strokes : + 3.0
Check tolerance cm³/1000S. : + 6.0
Spread
Tolerance cm³/1000 strokes : 12.0
Check tolerance cm³/1000S. : 16.0

rack travel mm : 15.40
Tolerance mm : + 0.15

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 111.0

Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000s. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm³/1000 strokes : 195.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000s. : + 24.0

*

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.50
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000s. : + 5.0
Spread
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000s. : 11.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.03.98
Test oil : ISO 4113

Combination No. : 0 402 736 894

Injection pump
Pump designation : PES6P120A120RS7400
EP type number : 0 412 726 950

Governor
Governor design. : RQV350...1200PA1261
Governor no. : 0 421 815 495

Cust. part No. : 3282766

Customer-spec. information

Customer : CUMMINS
Motor : 6CTAA
Power KW : 191.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 125
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.30
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery blocking

*NW after s.o.d. : 7.70
Tolerance : + 0.10
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.65
Tolerance mm : + - 0.05

Del. quantity
cm³/1000 strokes : 190.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.50
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000S. : + - 5.0

Spread

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1258
guide sleeve
travel mm : 10.14
Tolerance mm : + - 0.15

Rated speed rpm : 350
guide sleeve
travel mm : 1.93
Tolerance mm : + - 0.20

Rated speed rpm : 766
guide sleeve
travel mm : 5.91
Tolerance mm : + - 0.25

Rated speed rpm : 450
guide sleeve
travel mm : 4.49
Tolerance mm : + - 0.25

Rated speed rpm : 1520
guide sleeve
travel mm : 13.50
Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1340

Rack travel in mm : 12.60
Tolerance mm : + - 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 190.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 66.0
tolerance degree : + - 4.0

control lever
position degree : 120.0
tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 13.60
Rated speed rpm : 1245
Tolerance 1/min : + - 5

rack travel mm : 4.00
Rated speed rpm : 1370
Tolerance 1/min : + - 15

Check
 speed 1/min : + 20
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1450

LOW IDLE

control lever
 position degree : 72.0
 tolerance degree : + 4.0

control lever
 position degree : 18.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : > 8.60

Testing:

Rated speed rpm : 350
 rack travel mm : 5.50
 Tolerance mm : + 0.10

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1150
 rack travel mm : 14.65
 Tolerance mm : + 0.05

Rated speed rpm : 600
 rack travel mm : 14.10
 Tolerance mm : + 0.10

Rated speed rpm : 750
 rack travel mm : 14.75
 Tolerance mm : + 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
 Pressure hPa : 1500
 rack travel mm : 14.65
 Tolerance mm : + 0.05

Rated speed rpm : 1150
 Pressure hPa : -
 rack travel mm : 11.10
 Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 1150
 Pressure hPa : 733
 rack travel mm : 13.90
 Tolerance mm : + 0.20

Pressure hPa : 400
 rack travel mm : 11.90
 Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
 Rated speed rpm : < 280

Check
 speed 1/min : > 80
 Check
 speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1500
 Rated speed rpm : 600
 Del. quantity
 cm³/1000 strokes : 176.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 12.0
 Check tolerance
 cm³/1000S. : 16.0

rack travel mm : 14.75
 Tolerance mm : + 0.15

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 111.0
 Tolerance
 cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000s. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm³/1000 strokes : 195.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000s. : + 24.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.50
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000s. : + 5.0
Spread
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000s. : 11.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.03.98
Test oil : ISO 4113

Combination No. : 0 402 746 654

Injection pump
Pump designation : PES6P120A320RS7379
EP type number : 0 412 726 942

Governor
Governor design. : RQV250...900PA1224K
Governor no. : 0 421 815 468

Cust. part No. :

Customer-spec. information
Customer : PERKINS
Motor : EAGLE340TX
Power KW : 250.0

TEST BENCH REQUIREMENTS

Inlet Line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 084

Inlet press. bar : 3.0
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 130
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.90
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 12.00
Tolerance mm : + 1.00

Firing order : 1- 4- 2- 6- 3-
: 5

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery blocking

Tolerance : + 0.10
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 13.70
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 232.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 4.80
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 26.0

Tolerance
cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000S. : + - 6.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 958
guide sleeve
travel mm : 8.79
Tolerance mm : + - 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 2.23
Tolerance mm : + - 0.20

Rated speed rpm : 676
guide sleeve
travel mm : 5.80
Tolerance mm : + - 0.25

Rated speed rpm : 430

guide sleeve
travel mm : 3.62
Tolerance mm : + - 0.25

Rated speed rpm : 1260
guide sleeve
travel mm : 13.50
Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1070

Rack travel in mm : 15.90
Tolerance mm : + - 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 232.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 117.0
tolerance degree : + - 4.0

RATED SPEED
rack travel mm : 12.70
Rated speed rpm : 945
Tolerance 1/min : + - 5

rack travel mm : 4.00
Rated speed rpm : 1065
Tolerance 1/min : + - 15

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 72.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 6.30

Testing:

Rated speed rpm : 300
rack travel mm : 4.80
Tolerance mm : + - 0.10

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 13.70
Tolerance mm : + - 0.05

Rated speed rpm : 600
rack travel mm : 13.25
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 850
Pressure hPa : 1200
rack travel mm : 13.70
Tolerance mm : + - 0.05

Rated speed rpm : 850
Pressure hPa : -
rack travel mm : 8.85
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 850
Pressure hPa : 610
rack travel mm : 12.20
Tolerance mm : + - 0.20

Pressure hPa : 350
rack travel mm : 10.20

Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 230

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 255.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000s. : + - 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000s. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + - 0.50
Del. quantity
cm³/1000 strokes : 260.0
Tolerance
cm³/1000 strokes : + - 20.0
Check tolerance
cm³/1000s. : + - 25.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 4.80

Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spred
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.03.98
Test oil : ISO 4113

Combination No. : 0 402 746 844

Injection pump
Pump designation : PES6P120A320RS7162
EP type number : 0 412 726 819

Governor
Governor design. : RQ750PA836-2
Governor no. : 0 421 801 628

Cust. part No. :

Customer-spec. information
Customer : PERKINS
Motor : 2006 TAG
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet Line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 1.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 4- 2- 6- 3-
: 5

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.05
Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 380.0

 Tolerance
 cm³/1000 strokes : + - 1.0

 Check tolerance
 cm³/1000S. : + - 4.0

 Spread

 Tolerance
 cm³/1000 strokes : 5.0

 Check tolerance
 cm³/1000S. : 9.0

 Rated speed rpm : 300
 Del. quantity
 cm³/1000 strokes : 41.0
 Tolerance
 cm³/1000 strokes : + - 3.0
 Check tolerance
 cm³/1000S. : + - 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 757
 guide sleeve
 travel mm : 1.84
 Tolerance mm : + - 0.25

 Rated speed rpm : 930
 guide sleeve
 travel mm : 42.98
 Tolerance mm : + - 0.25

 Rated speed rpm : 820
 guide sleeve
 travel mm : 9.41
 Tolerance mm : + - 0.25

 Rated speed rpm : 824
 guide sleeve
 travel mm : 10.00
 Tolerance mm : + - 0.25

 Rated speed rpm : 880

guide sleeve
 travel mm : 11.50
 Tolerance mm : + - 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 380.0
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 89.0
 tolerance degree : + - 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
 rack travel mm : 12.00

 Rated speed rpm : 784
 Tolerance 1/min : + - 4
 rack travel mm : 4.00

 rack travel mm : 0.50
 Tolerance mm : + - 0.50
 Rated speed rpm : 820

 Rated speed rpm : 751
 rack travel mm : 12.00

 Rated speed rpm : 785
 Tolerance 1/min : + - 4
 rack travel mm : 4.00

 rack travel mm : 0.50
 Tolerance mm : + - 0.50
 Rated speed rpm : 820

 Rated speed rpm : 752
 rack travel mm : 12.00

Rated speed rpm : 786
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 820

Rated speed rpm : 753
rack travel mm : 12.00

Rated speed rpm : 787
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 820

Rated speed rpm : 754
rack travel mm : 12.00

Rated speed rpm : 788
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 820

Rated speed rpm : 755
rack travel mm : 12.00

Rated speed rpm : 789
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 820

TORQUE CONTROL
Rated speed rpm : 700
rack travel mm : 13.05
Tolerance mm : + - 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 320.0
Tolerance
cm³/1000 strokes : + - 20.0
Check tolerance
cm³/1000S. : + - 24.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 41.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.03.98
Test oil : ISO 4113

Combination No. : 0 402 746 882

Injection pump
Pump designation : PES6P120A320RS7156
: -1
EP type number : 0 412 726 830

Governor
Governor design. : RQV350...1050PA941
: -1

Governor no. : 0 421 813 887

Cust. part No. :

Customer-spec. information

Customer : PERKINS
Motor : 2006 TW-H
Power KW : 261.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 067

Outside diameter : 6.0
x inside diameter : 1.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 4- 2- 6- 3-
: 5

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance *NW : + 0.75

Start of delivery mark

Tolerance : + 0.50
Check tolerance *NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.05
Tolerance mm : + 0.05

Del. quantity cm³/1000 strokes : 270.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 8.10
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 66.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 5.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1104
guide sleeve
travel mm : 5.69

Tolerance mm : + 0.15

Rated speed rpm : 350
guide sleeve
travel mm : 0.69

Tolerance mm : + 0.20

Rated speed rpm : 1030
guide sleeve
travel mm : 5.00

Tolerance mm : + 0.25

Rated speed rpm : 540
guide sleeve
travel mm : 5.00

Tolerance mm : + 0.25

Rated speed rpm : 1360
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 105
Rated speed rpm : 800

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 270.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 49.0
tolerance degree : + 4.0

control lever
position degree : 103.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 13.00
Rated speed rpm : 1100
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1195
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1270

LOW IDLE		Rated speed rpm : 500
control lever		Pressure hPa : 560
position degree : 70.0		rack travel mm : 11.90
tolerance degree : + 4.0		Tolerance mm : + 0.10
control lever		Pressure hPa : 710
position degree : 16.0		rack travel mm : 13.15
tolerance degree : + 4.0		Tolerance mm : + 0.05
Setting point w/out bumper spring		Start interlock
Rated speed rpm : 200		Rated speed rpm : > 100
CRT mm min. : > 10.00		Rated speed rpm : < 300
Testing:		Check speed 1/min : > 80
Rated speed rpm : 350		Check speed 1/min : < 320
rack travel mm : 8.10		
Tolerance mm : + 0.10		
rack travel mm : 2.00		FUEL DELIVERY CHARACTERISTICS
Rated speed rpm : 430		Aneroid pressure hPa : 1200
Tolerance 1/min : + 30		Rated speed rpm : 600
Rated speed rpm : 395		Del. quantity cm ³ /1000 strokes : 278.0
TORQUE CONTROL		Tolerance cm ³ /1000 strokes : + 3.0
Rated speed rpm : 1050		Check tolerance cm ³ /1000S. : + 6.0
rack travel mm : 14.05		Spread
Tolerance mm : + 0.05		Tolerance cm ³ /1000 strokes : 8.0
Rated speed rpm : 600		Check tolerance cm ³ /1000S. : 12.0
rack travel mm : 14.10		
Tolerance mm : + 0.10		
ANEROID/ALTITUDE COMPENSATOR TEST		
SETTING		Aneroid pressure hPa : -
Rated speed rpm : 500		Rated speed rpm : 600
Pressure hPa : 1200		Del. quantity cm ³ /1000 strokes : 183.0
rack travel mm : 14.05		Tolerance cm ³ /1000 strokes : + 1.0
Tolerance mm : + 0.05		Check tolerance cm ³ /1000S. : + 4.0
Rated speed rpm : 500		
Pressure hPa : -		
rack travel mm : 10.90		STARTING FUEL DELIVERY
Tolerance mm : + 0.20		Rated speed rpm : 100
MEASUREMENT		Del. quantity cm ³ /1000 strokes : 205.0
		Tolerance cm ³ /1000 strokes : + 20.0

Check tolerance
cm³/1000S. : + 24.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 8.10

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 66.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 5.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.11.93
Test oil : ISO 4113

Combination No. : 0 402 746 937

Injection pump
Pump designation : PES6P120A720RS7268
EP type number : 0 412 726 884

Governor
Governor design. : RQ275/1100PA915-2
Governor no. : 0 421 801 671

Cust. part No. :

Customer-spec. information
Customer : IVECO-UNIC
Motor : 8460.41.603

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.15
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.45
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 196.0

Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spred
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0
 Rated speed rpm : 275
 Rack travel in mm : 6.30
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 23.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0
 Spred
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : 109
 Rated speed rpm : 600
 Rack travel in mm : 20.00
 Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 900
 Del. quantity
 cm³/1000 strokes : 196.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0

Spred
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

RATED SPEED
 rack travel mm : 10.90
 Rated speed rpm : 1153
 Tolerance 1/min : + 8
 rack travel mm : 4.00
 Rated speed rpm : 1245
 Tolerance 1/min : + 15
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever
 position degree : 74.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100
 CRT mm min. : > 7.80

Testing:

Rated speed rpm : 275
 rack travel mm : 6.30
 Tolerance mm : + 0.10
 rack travel mm : 2.00
 Rated speed rpm : 365
 Tolerance 1/min : + 20

TORQUE CONTROL
 Rated speed rpm : 1100
 rack travel mm : 12.45
 Tolerance mm : + 0.05

Rated speed rpm : 550
 rack travel mm : 12.50
 Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 11.95
Tolerance mm : + - 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.90
Tolerance mm : + - 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 240
rack travel mm : 9.50
Tolerance mm : + - 0.10

Pressure hPa : 310
rack travel mm : 10.85
Tolerance mm : + - 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 900
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 216.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 112.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated,
rack must reach start position in max.
control lever setting.

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : + - 15.0
Check tolerance
cm³/1000S. : + - 19.0

LOW IDLE

Rated speed rpm : 275
Rack travel in mm : 6.30
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.07.93
Test oil : ISO 4113

Combination No. : 0 402 746 943

Injection pump
Pump designation : PES6P120A720RS7224 .
: -1
EP type number : 0 412 726 889

Governor
Governor design. : RQ275/1050PA1021-3
Governor no. : 0 421 801 677

Cust. part No. :

Customer-spec. information
Customer : IVECO-UNIC
Motor : 8460.41.731

TEST BENCH REQUIREMENTS

Inlet Line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.15
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.25
Tolerance mm : + - 0.05

Del. quantity
cm³/1000 strokes : 223.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.00
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000S. : + - 6.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : + - 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 223.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Spred
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED
rack travel mm : 11.70
Rated speed rpm : 1103
Tolerance 1/min : + - 8

rack travel mm : 4.00
Rated speed rpm : 1175
Tolerance 1/min : + - 15

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 6.50

Testing:

Rated speed rpm : 275
rack travel mm : 5.00
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 355
Tolerance 1/min : + - 20

TORQUE CONTROL
Rated speed rpm : 1050
rack travel mm : 13.25
Tolerance mm : + - 0.05

Rated speed rpm : 550
rack travel mm : 13.30
Tolerance mm : + - 0.10

Rated speed rpm : 1050
rack travel mm : 12.75
Tolerance mm : + - 0.05

Rated speed rpm : 550
rack travel mm : 12.80
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 12.75
Tolerance mm : + - 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 7.70
Tolerance mm : + - 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 290
rack travel mm : 8.80
Tolerance mm : + - 0.20

Pressure hPa : 580
rack travel mm : 11.35
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 215

Check speed 1/min : > 80
Check speed 1/min : < 235

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 550

Del. quantity
cm³/1000 strokes : 270.0
Tolerance
cm³/1000 strokes : + - 4.0
Check tolerance
cm³/1000S. : + - 7.0

rack travel mm : 12.75
Tolerance mm : + - 0.05

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 127.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : + - 15.0
Check tolerance
cm³/1000S. : + - 19.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 5.00
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.01.94
Test oil : ISO 4113

Combination No. : 0 402 746 963

Injection pump
Pump designation : PFS6P120A720LS7244
EP type number : 0 412 726 857

Governor
Governor design. : RQ750PA981-2
Governor no. : 0 421 801 699

Cust. part No. : 3-7258

CUSTOMER-SPEC. INFORMATION

Customer : MAN
Motor : D2866 LE
Power KW : 244.0

TEST BENCH REQUIREMENTS

Inlet Line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.75
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 19.50
Tolerance mm : + 1.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.35
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 276.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 750

guide sleeve travel mm : 2.55

Tolerance mm : + - 0.25

Rated speed rpm : 860

guide sleeve travel mm : 17.35

Tolerance mm : + - 0.25

Rated speed rpm : 816

guide sleeve travel mm : 10.00

Tolerance mm : + - 0.25

Rated speed rpm : 870

guide sleeve travel mm : 11.50

Tolerance mm : + - 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure hPa : -

Del. quantity
cm³/1000 strokes : 276.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 84.0

tolerance degree : + 2.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750

rack travel mm : 11.35

Rated speed rpm : 785

Tolerance 1/min : + 4

rack travel mm : 4.00

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 950

Rated speed rpm : 751

rack travel mm : 11.35

Rated speed rpm : 786

Tolerance 1/min : + 4

rack travel mm : 4.00

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 950

Rated speed rpm : 752

rack travel mm : 11.35

Rated speed rpm : 787

Tolerance 1/min : + 4

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 950

Rated speed rpm : 753
rack travel mm : 11.35

Rated speed rpm : 788
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 950

Rated speed rpm : 754
rack travel mm : 11.35

Rated speed rpm : 789
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 950

Rated speed rpm : 755
rack travel mm : 11.35

Rated speed rpm : 790
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 950

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.35
Tolerance mm : + - 0.05

LOW IDLE

Rated speed rpm : 300

+ Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.10.93
Test oil : ISO 4113

Combination No. : 0 403 446 326

Injection pump
Pump designation : PES6MW100/720RS1183.
EP type number : 0 413 406 175

Governor
Governor design. : RQV300...1350MW138
Governor no. : 0 420 083 302

Cust. part No. :

Customer-spec. information

Customer : IVECO-AIFO
Motor : 8061.SRM 30.10
Power KW : 221.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 3.05
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1350

Rack travel in mm : 12.85
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 131.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 4.0

Spread

Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 7.5

Rated speed rpm : 300
 Rack travel in mm : 7.30
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 17.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1404
 guide sleeve
 travel mm : 7.90
 Tolerance mm : + 0.25
 Rated speed rpm : 300
 guide sleeve
 travel mm : 1.27
 Tolerance mm : + 0.25
 Rated speed rpm : 965
 guide sleeve
 travel mm : 5.12
 Tolerance mm : + 0.25
 Rated speed rpm : 408
 guide sleeve
 travel mm : 2.11
 Tolerance mm : + 0.25
 Rated speed rpm : 458
 guide sleeve
 travel mm : 2.49
 Tolerance mm : + 0.25
 Rated speed rpm : 580
 guide sleeve
 travel mm : 3.10
 Tolerance mm : + 0.25

Rated speed rpm : 1780
 guide sleeve
 travel mm : 11.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1480
 Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1350
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 131.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 7.5

CONTROL LEVER

control lever
 position degree : 116.0
 tolerance degree : + 4.0
 RATED SPEED
 rack travel mm : 9.50
 Rated speed rpm : 1395
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1545
 Tolerance 1/min : + 15
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1650

LOW IDLE

control lever
position degree : 84.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 9.00

Testing:

Rated speed rpm : 300
rack travel mm : 7.30
Tolerance mm : + - 0.10

TORQUE CONTROL

Rated speed rpm : 1350
rack travel mm : 12.85
Tolerance mm : + - 0.05

Rated speed rpm : 800
rack travel mm : 12.90
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 12.85
Tolerance mm : + - 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.85
Tolerance mm : + - 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 300
rack travel mm : 11.75
Tolerance mm : + - 0.15

Pressure hPa : 250
rack travel mm : 10.75
Tolerance mm : + - 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1000
Rated speed rpm : 800
Del. quantity cm³/1000 strokes : 134.0
Tolerance cm³/1000 strokes : + - 2.0
Check tolerance cm³/1000S. : + - 5.0
Spread
Tolerance cm³/1000 strokes : 6.0
Check tolerance cm³/1000S. : 9.0

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 69.0
Tolerance cm³/1000 strokes : + - 1.0
Check tolerance cm³/1000S. : + - 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.95
Tolerance mm : + - 0.15
Del. quantity cm³/1000 strokes : 105.0
Tolerance cm³/1000 strokes : + - 5.0
Check tolerance cm³/1000S. : + - 8.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 7.30
Tolerance mm : + - 0.10
Del. quantity cm³/1000 strokes : 17.0
Tolerance cm³/1000 strokes : + - 2.0
Check tolerance cm³/1000S. : + - 4.5
Spread
Tolerance cm³/1000 strokes : 3.5

Check tolerance
cm³/1000s. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.03.98
Test oil : ISO 4113

Combination No. : 0 403 466 131

Injection pump
Pump designation : PES6MW100/120RS1184.
EP type number : 0 413 406 171

Governor
Governor design. : RSV375...1250MW2A334
: -1
Governor no. : 0 420 085 207

Cust. part No. : 3281954

Customer-spec. information

Customer : CUMMINS
Motor : 6 BTA 5.9
Power KW : 140.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 3.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.35
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 111.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 375

Rack travel in mm : 7.25
Tolerance mm : ± 0.25
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 800
Del. quantity
cm³/1000 strokes : 111.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 111.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 9.30
Rated speed rpm : 1300
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1380
Tolerance 1/min : ± 15

rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 1550

rack travel mm : 4.00
Rated speed rpm : 1435
Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 87.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 375
rack travel mm : 6.75
Tolerance mm : ± 0.25

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 375
rack travel mm : 7.25
Tolerance mm : ± 0.25

TORQUE CONTROL
Rated speed rpm : 1250
rack travel mm : 10.35
Tolerance mm : ± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 800
rack travel mm : 10.35
Tolerance mm : + - 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.90
Tolerance mm : + - 0.05

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 470
rack travel mm : 10.05
Tolerance mm : + - 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 85.0
Tolerance
cm³/1000 strokes : + - 5.0
Check tolerance
cm³/1000S. : + - 8.0

LOW IDLE

Rated speed rpm : 375

Rack travel in mm : 7.25
Tolerance mm : + - 0.25
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.5
Spred
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.98
Test oil : ISO 4113

Combination No. : 0 400 864 103

Injection pump
Pump designation : PES4A95D410/3RS2789
EP type number : 0 410 894 995

Governor
Governor design. : RSV325...1250A5C871L
Governor no. : 0 420 232 626

Cust. part No. : 0423 1876 KY

Customer-spec. information

Customer : KHD-DMI
Motor : BF4L 913
Power KW : 78.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.50
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 87.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance cm³/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 9.60

Tolerance mm : + 0.10

Del. quantity cm³/1000 strokes : 14.0

Tolerance cm³/1000 strokes : + 2.0

Check tolerance cm³/1000S. : + 4.5

Spread Tolerance cm³/1000 strokes : 5.5

Check tolerance cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring pre-tension click setting x : 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure hPa : -

Del. quantity cm³/1000 strokes : 87.0

Tolerance cm³/1000 strokes : + 1.0

Check tolerance cm³/1000S. : + 3.0

Spread Tolerance cm³/1000 strokes : 3.5

Check tolerance cm³/1000S. : 8.0

CONTROL LEVER

control lever position degree : 102.0
tolerance degree : + 4.0

RATED SPEED rack travel mm : 12.50

Rated speed rpm : 1295
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1355
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1565

rack travel mm : 4.00
Rated speed rpm : 1415
Tolerance 1/min : + 15

LOW IDLE

control lever position degree : 69.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 9.10
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325
rack travel mm : 9.60
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 605
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 13.50
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 14.20
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 13.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1400
rack travel mm : 14.20
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 13.30
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 300
rack travel mm : 13.70
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : -
Rated speed rpm : 750
rack travel mm : 13.90
Tolerance mm : \pm 0.10
Del. quantity cm³/1000 strokes : 85.0
Tolerance cm³/1000 strokes : \pm 5.0
Check tolerance cm³/1000S. : \pm 3.0
Spread
Tolerance cm³/1000 strokes : 6.0
Check tolerance cm³/1000S. : 8.0

Aneroid pressure hPa : -
Rated speed rpm : 500

Del. quantity cm³/1000 strokes : 68.0
Tolerance cm³/1000 strokes : \pm 2.0
Check tolerance cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity cm³/1000 strokes : 120.0
Tolerance cm³/1000 strokes : \pm 7.5
Check tolerance cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 9.60
Tolerance mm : \pm 0.10
Del. quantity cm³/1000 strokes : 14.0
Tolerance cm³/1000 strokes : \pm 2.0
Check tolerance cm³/1000S. : \pm 4.5
Spread
Tolerance cm³/1000 strokes : 5.5
Check tolerance cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.98
Test oil : ISO 4113

Combination No. : 0 400 864 106

Injection pump
Pump designation : PES4A95D410/3RS2789.
EP type number : 0 410 894 995

Governor
Governor design. : RSV325...1250A5C879L
Governor no. : 0 420 232 634

Cust. part No. : 0423 2071 KY

Customer-spec. information

Customer : KHD-DMI
Motor : BF4L 913
Power KW : 78.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + - 1.0

Prestroke mm : 3.00
Tolerance mm : + - 0.05
Check tolerance mm : + - 0.10

Rack travel in mm : 10.50
Tolerance mm : + - 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + - 0.50
Check tolerance °NW : + - 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.50
Tolerance mm : + - 0.05

Del. quantity
cm³/1000 strokes : 87.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 9.60
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 14.0

Tolerance
cm³/1000 strokes : + - 2.0

Check tolerance
cm³/1000S. : + - 4.5

Spread
Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + - 0.20

governor spring
pre-tension
click setting x : 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 87.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 102.0
tolerance degree : + - 4.0

RATED SPEED
rack travel mm : 12.50
Rated speed rpm : 1295
Tolerance 1/min : + - 5

rack travel mm : 4.00
Rated speed rpm : 1355
Tolerance 1/min : + - 15

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1565

rack travel mm : 4.00
Rated speed rpm : 1415
Tolerance 1/min : + - 15

LOW IDLE

control lever
position degree : 69.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 9.10
Tolerance mm : + - 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325
rack travel mm : 9.60
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 605
Tolerance 1/min : + - 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 13.50
Tolerance mm : + - 0.05

Rated speed rpm : 500
 rack travel mm : 14.20
 Tolerance mm : + - 0.10

 Rated speed rpm : 750
 rack travel mm : 13.90
 Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 1400
 rack travel mm : 14.20
 Tolerance mm : + - 0.10

 Rated speed rpm : 500
 Pressure hPa : -
 rack travel mm : 13.30
 Tolerance mm : + - 0.10

MEASUREMENT

Rated speed rpm : 500

 Pressure hPa : 300
 rack travel mm : 13.70
 Tolerance mm : + - 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : -
 Rated speed rpm : 750
 rack travel mm : 13.90
 Tolerance mm : + - 0.10
 Del. quantity
 cm³/1000 strokes : 85.0
 Tolerance
 cm³/1000 strokes : + - 2.0
 Check tolerance
 cm³/1000S. : + - 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 500

Del. quantity
 cm³/1000 strokes : 68.0
 Tolerance
 cm³/1000 strokes : + - 2.0
 Check tolerance
 cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 20.25
 Tolerance mm : + - 0.75
 Del. quantity
 cm³/1000 strokes : 120.0
 Tolerance
 cm³/1000 strokes : + - 7.5
 Check tolerance
 cm³/1000S. : + - 10.0

LOW IDLE

Rated speed rpm : 325

 Rack travel in mm : 9.60
 Tolerance mm : + - 0.10
 Del. quantity
 cm³/1000 strokes : 14.0
 Tolerance
 cm³/1000 strokes : + - 2.0
 Check tolerance
 cm³/1000S. : + - 4.5
 Spread
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.03.98
Test oil : ISO 4113

Combination No. : 0 400 864 109

Injection pump
Pump designation : PES4A95D410/3RS2789.
EP type number : 0 410 894 995

Governor
Governor design. : RSV325...1250A5C917L
Governor no. : 0 420 232 639

Cust. part No. : 0423 2332 KY

Customer-spec. information

Customer : KHD-DMI
Motor : F4L912/913
Power KW : 59.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.00
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 76.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 3.0

Spread

Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

Rated speed rpm : 325
 Rack travel in mm : 8.50
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 11.5
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spred
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : FREE
 Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : + 0.20
 governor spring
 pre-tension
 click setting x : 4.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 76.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0
 Spred
 Tolerance
 cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 107.0
 tolerance degree : + 4.0
 RATED SPEED
 rack travel mm : 10.35
 Rated speed rpm : 1295
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1355
 Tolerance 1/min : + 15
 rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 1530
 rack travel mm : 4.00
 Rated speed rpm : 1380
 Tolerance 1/min : + 15

LOW IDLE

control lever
 position degree : 74.0
 tolerance degree : + 4.0
 Setting point w/out bumper spring

Rated speed rpm : 325
 rack travel mm : 8.00
 Tolerance mm : + 0.10

Rated speed rpm : 100
 CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325
 rack travel mm : 8.50
 Tolerance mm : + 0.10
 rack travel mm : 2.00
 Rated speed rpm : 510
 Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 11.35
Tolerance mm : + - 0.05

Rated speed rpm : 500

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 17.00
Tolerance mm : + - 0.75
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : + - 7.5
Check tolerance
cm³/1000s. : + - 10.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 8.50
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 11.5
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000s. : + - 4.5
Spread
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000s. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.03.98
Test oil : ISO 4113

Combination No. : 0 402 746 652

Injection pump
Pump designation : PES6P120A320RS7372 .
EP type number : 0 412 726 940

Governor
Governor design. : RQV250...1500PA1222K
Governor no. : 0 421 815 466

Cust. part No. : 3897621

Customer-spec. information
Customer : CDC
Motor : 6BTA
Power KW : 265.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + - 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + - 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + - 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + - 1.0

Prestroke mm : 4.00
Tolerance mm : + - 0.05
Check
tolerance mm : + - 0.10

Rack travel in mm : 10.50
Tolerance mm : + - 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

*NW after s.o.d. : 12.00
Tolerance : + - 0.50
Check
tolerance *NW : + - 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1500

Rack travel in mm : 14.45
Tolerance mm : + - 0.05

Del. quantity
 cm³/1000 strokes : 212.5
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0
 Rated speed rpm : 300
 Rack travel in mm : 7.15
 Tolerance mm : + - 0.20
 Del. quantity
 cm³/1000 strokes : 28.0
 Tolerance
 cm³/1000 strokes : + - 3.0
 Check tolerance
 cm³/1000S. : + - 5.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1570
 guide sleeve
 travel mm : 9.90
 Tolerance mm : + - 0.15
 Rated speed rpm : 250
 guide sleeve
 travel mm : 1.00
 Tolerance mm : + - 0.20
 Rated speed rpm : 986
 guide sleeve
 travel mm : 5.80
 Tolerance mm : + - 0.25
 Rated speed rpm : 480
 guide sleeve
 travel mm : 3.00

Tolerance mm : + - 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1500
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 212.5
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

CONTROL LEVER

control lever
 position degree : 122.5
 tolerance degree : + - 6.0
 RATED SPEED
 rack travel mm : 13.40
 Rated speed rpm : 1565
 Tolerance 1/min : + - 5
 rack travel mm : 5.90
 Rated speed rpm : 1695
 Tolerance 1/min : + - 15
 rack travel mm : 0.50
 Tolerance mm : + - 0.50
 Rated speed rpm : 1780

LOW IDLE

control lever
 position degree : 77.0
 tolerance degree : + - 6.0
 Control lever difference
 Grad : 45.5
 tolerance degree : + - 6.0
 Setting point w/out bumper spring
 Rated speed rpm : 225
 CRT mm min. : > 8.00

Testing:

Rated speed rpm : 300
rack travel mm : 7.15
Tolerance mm : + - 0.20

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1500
rack travel mm : 14.45
Tolerance mm : + - 0.05

Rated speed rpm : 1200
rack travel mm : 14.10
Tolerance mm : + - 0.10

Rated speed rpm : 700
rack travel mm : 13.20
Tolerance mm : + - 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1500
Pressure hPa : 1200

Rated speed rpm : 1500
Pressure hPa : -
rack travel mm : 10.10
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 1500

Pressure hPa : 800
rack travel mm : 13.40
Tolerance mm : + - 0.20

Pressure hPa : 410
rack travel mm : 11.10
Tolerance mm : + - 0.20

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 240

Check speed 1/min : > 80
Check speed 1/min : < 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 202.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 13.20
Tolerance mm : + - 0.20

Aneroid pressure
hPa : -
Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : 108.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : + - 0.50
Del. quantity
cm³/1000 strokes : 167.0
Tolerance
cm³/1000 strokes : + - 20.0
Check tolerance
cm³/1000S. : + - 25.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 7.15
Tolerance mm : + - 0.20
Del. quantity
cm³/1000 strokes : 28.0

Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 5.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.03.98
Test oil : ISO 4113

Combination No. : 9 400 030 730FA

Injection pump
Pump designation : PES6A95D320/3RS2881.
EP type number : 9 410 037 215

Governor
Governor design. :
Governor no. : 9 420 034 710

Cust. part No. : 3934842

Customer-spec. information
Customer : CDC
Motor : 6ETA
Power KW : 129.6

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery blocking

*NW after s.o.d. : 8.50
Tolerance : + 0.50
Check
tolerance *NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.90

Tolerance mm : + 0.05

Del. quantity cm³/1000 strokes : 108.0

Tolerance cm³/1000 strokes : + 1.0

Check tolerance cm³/1000S. : + 3.0

Spread

Tolerance cm³/1000 strokes : 3.5

Check tolerance cm³/1000S. : 6.0

Rated speed rpm : 475

Rack travel in mm : 5.70

Tolerance mm : + 0.10

Del. quantity cm³/1000 strokes : 18.0

Tolerance cm³/1000 strokes : + 2.0

Check tolerance cm³/1000S. : + 4.5

Spread

Tolerance cm³/1000 strokes : 3.5

Check tolerance cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree : - 3

governor spring pre-tension click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure hPa : 1200

Del. quantity cm³/1000 strokes : 108.0

Tolerance cm³/1000 strokes : + 1.0

Check tolerance cm³/1000S. : + 3.0

Spread

Tolerance cm³/1000 strokes : 3.5

Check tolerance cm³/1000S. : 6.0

CONTROL LEVER

control lever position degree : 110.0

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.90

Rated speed rpm : 1325

Tolerance 1/min : + 5

Check speed 1/min : + 10

rack travel mm : 4.00

Rated speed rpm : 1405

Tolerance 1/min : + 5

Check speed 1/min : + 10

rack travel mm : 0.85

Tolerance mm : + 0.55

Rated speed rpm : 1300

rack travel mm : 4.00

Rated speed rpm : 1410

Tolerance 1/min : + 15

Check speed 1/min : + 20

LOW IDLE

control lever position degree : 84.0

tolerance degree : + 4.0

Control lever difference

Grad : 26.0

tolerance degree : + 6.0

Setting point w/out bumper spring

Rated speed rpm : 475

rack travel mm : 5.20
Tolerance mm : + - 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 475
rack travel mm : 5.70
Tolerance mm : + - 0.10

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 12.90
Tolerance mm : + - 0.05

Rated speed rpm : 750
rack travel mm : 13.20
Tolerance mm : + - 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.30
Tolerance mm : + - 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 740
rack travel mm : 12.55
Tolerance mm : + - 0.20

Pressure hPa : 535
rack travel mm : 11.75
Tolerance mm : + - 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 115.5

Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 92.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + - 0.50
Del. quantity
cm³/1000 strokes : 120.5
Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000S. : + - 15.0

LOW IDLE

Rated speed rpm : 475
Rack travel in mm : 5.70
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.5
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.98
Test oil : ISO 4113

Combination No. : 9 400 030 747

Injection pump
Pump designation : PES4A95D320/3RS2880.
EP type number : 9 410 037 214

Governor
Governor design. : RSV475...1100A0C863R
Governor no. : 9 420 034 721

Cust. part No. : 3930152

Customer-spec. information

Customer : CDC
Motor : 4BT3.9
Power KW : 71.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 2.45
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

*NW after s.o.d. : 7.50
Tolerance : + 0.50
Check
tolerance *NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.75
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 100.0

Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0
 Spred
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 6.5

 Rated speed rpm : 475
 Rack travel in mm : 5.60
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 21.5
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spred
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 8.0

(E) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : + 0.20
 governor spring
 pre-tension
 click setting x : 3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 100.0

Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0
 Spred
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 6.5

 CONTROL LEVER

control lever
 position degree : 111.5
 tolerance degree : + 4.0

RATED SPEED
 rack travel mm : 10.75
 Rated speed rpm : 1170
 Tolerance 1/min : + 5
 Check
 speed 1/min : + 10
 rack travel mm : 6.00
 Rated speed rpm : 1240
 Tolerance 1/min : + 5
 Check
 speed 1/min : + 10
 rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 1375
 rack travel mm : 6.00
 Rated speed rpm : 1240
 Tolerance 1/min : + 15
 Check
 speed 1/min : + 20

LOW IDLE

control lever
 position degree : 90.0
 tolerance degree : + 4.0

Control Lever difference
 Grad : 21.5
 tolerance degree : + 6.0

Setting point w/out bumper spring

Rated speed rpm : 475
 rack travel mm : 5.10
 Tolerance mm : + 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 475
rack travel mm : 5.60
Tolerance mm : + - 0.10

TORQUE CONTROL
Rated speed rpm : 1100
rack travel mm : 11.75
Tolerance mm : + - 0.05

Rated speed rpm : 750
rack travel mm : 12.75
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 750
Pressure hPa : 1000

Rated speed rpm : 750
Pressure hPa : -
rack travel mm : 11.10
Tolerance mm : + - 0.10

MEASUREMENT

Rated speed rpm : 750
Pressure hPa : 600
rack travel mm : 12.70
Tolerance mm : + - 0.20

Pressure hPa : 410
rack travel mm : 11.80
Tolerance mm : + - 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 110.5
Tolerance
cm³/1000 strokes : + - 2.0

Check tolerance
cm³/1000S. : + - 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 86.5
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + - 0.50
Del. quantity
cm³/1000 strokes : 120.5
Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000S. : + - 15.0

LOW IDLE

Rated speed rpm : 475
Rack travel in mm : 5.60
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 21.5
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.5
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.03.98
Test oil : ISO 4113

Combination No. : 0 401 876 769

Injection pump
Pump designation : PE6P120A320RS3206-2.
EP type number : 0 411 826 784

Governor
Governor design. : RSV250...1300P0A374
: -8
Governor no. : 0 421 833 320

Cust. part No. : 864068 P05 v. 04/95

Customer-spec. information

Customer : PENTA
Motor : TAMD71 B
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 7.20
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 10.10
Tolerance mm : + - 0.05

Del. quantity
cm³/1000 strokes : 216.5

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 250

Rack travel in mm : 5.20
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : + - 2.5

Check tolerance
cm³/1000S. : + - 5.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + - 0.20

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 216.5

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 64.0
tolerance degree : + - 4.0

control lever
position degree : 114.0
tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 9.10
Rated speed rpm : 1340

Tolerance 1/min : + - 5

rack travel mm : 4.00
Rated speed rpm : 1430

Tolerance 1/min : + - 15

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1530

rack travel mm : 4.00
Rated speed rpm : 1440
Tolerance 1/min : + - 15

LOW IDLE

control lever
position degree : 80.0
tolerance degree : + - 4.0

control lever
position degree : 30.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
rack travel mm : 4.70
Tolerance mm : + - 0.10

Testing:

Rated speed rpm : 250
rack travel mm : 5.20
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 440
Tolerance 1/min : + - 30

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 10.10
Tolerance mm : + - 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 10.10
Tolerance mm : + - 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 7.20
Tolerance mm : + - 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 780
rack travel mm : 2.60
Tolerance mm : + - 0.20

Pressure hPa : 350
rack travel mm : 0.25
Tolerance mm : + - 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 136.5
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0

LOW IDLE

Rated speed rpm : 250
Rack travel in mm : 5.20
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : + - 2.5
Check tolerance
cm³/1000S. : + - 5.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.98
Test oil : ISO 4113

Combination No. : 0 402 646 675

Injection pump
Pump designation : PE6P120A320RS7299
EP type number : 0 412 626 885

Governor
Governer design. : RQV275...1000PA1337K
Governer no. : 0 421 815 554

Cust. part No. : 1322504

Customer-spec. information

Customer : DAF
Motor : WS 268 M
Power KW : 268.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.85
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 13.55
Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 250.0
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

Rated speed rpm : 275
 Rack travel in mm : 5.10
 Tolerance mm : + - 0.10
 Del. quantity
 cm³/1000 strokes : 17.0
 Tolerance
 cm³/1000 strokes : + - 3.0
 Check tolerance
 cm³/1000S. : + - 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1047
 guide sleeve
 travel mm : 7.35
 Tolerance mm : + - 0.15
 Rated speed rpm : 275
 guide sleeve
 travel mm : 2.04
 Tolerance mm : + - 0.20
 Rated speed rpm : 820
 guide sleeve
 travel mm : 5.14
 Tolerance mm : + - 0.25
 Rated speed rpm : 480

guide sleeve
 travel mm : 3.34
 Tolerance mm : + - 0.25
 Rated speed rpm : 1282
 guide sleeve
 travel mm : 12.00
 Tolerance mm : + - 0.25
 Rated speed rpm : 1370
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1248

Rack travel in mm : 12.80
 Tolerance mm : + - 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 250.0
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 110.0
 tolerance degree : + - 4.0

RATED SPEED
 rack travel mm : 12.55
 Rated speed rpm : 1042
 Tolerance 1/min : + - 5
 rack travel mm : 4.00
 Rated speed rpm : 1150
 Tolerance 1/min : + - 15

rack travel mm : 0.70
Tolerance mm : + 0.70
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 75.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : > 7.50

Testing:

Rated speed rpm : 275
rack travel mm : 5.10
Tolerance mm : + 0.10

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 13.55
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 13.05
Tolerance mm : + 0.10

Rated speed rpm : 600
rack travel mm : 12.35
Tolerance mm : + 0.10

Rated speed rpm : 500
rack travel mm : 11.90
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 980
Pressure hPa : 1500
rack travel mm : 13.55
Tolerance mm : + 0.05

Rated speed rpm : 980
Pressure hPa : -

rack travel mm : 8.20
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 980

Pressure hPa : 820
rack travel mm : 12.25
Tolerance mm : + 0.05

Pressure hPa : 400
rack travel mm : 9.40
Tolerance mm : + 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 750

Del. quantity cm³/1000 strokes : 263.0

Tolerance cm³/1000 strokes : + 2.0

Check tolerance cm³/1000S. : + 5.0

Spred

Tolerance cm³/1000 strokes : 8.0

Check tolerance cm³/1000S. : 12.0

rack travel mm : 12.35
Tolerance mm : + 0.10

Aneroid pressure

hPa : -
Rated speed rpm : 600

Del. quantity cm³/1000 strokes : 144.0

Tolerance cm³/1000 strokes : + 1.0

Check tolerance cm³/1000S. : + 4.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 5.10

Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.98
Test oil : ISO 4113

Combination No. : 0 402 646 682

Injection pump
Pump designation : PE6P120A320RS7438
EP type number : 0 412 626 965

Governor
Governor design. : RQV275...1150PA1386K
Governor no. : 0 421 815 563

Cust. part No. : 1349449

Customer-spec. information

Customer : DAF
Motor : PF 235 M (flach)
Power KW : 235.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.85
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.10
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 13.50
Tolerance mm : + 0.05

Del. quantity cm³/1000 strokes : 259.0
 Tolerance cm³/1000 strokes : + 1.0
 Check tolerance cm³/1000S. : + 4.0
 Spreed
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0
 Rated speed rpm : 275
 Rack travel in mm : 5.00
 Tolerance mm : + 0.10
 Del. quantity cm³/1000 strokes : 16.0
 Tolerance cm³/1000 strokes : + 3.0
 Check tolerance cm³/1000S. : + 6.0
 Spreed
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1174
 guide sleeve travel mm : 7.43
 Tolerance mm : + 0.15
 Rated speed rpm : 275
 guide sleeve travel mm : 1.71
 Tolerance mm : + 0.20
 Rated speed rpm : 940
 guide sleeve travel mm : 5.44
 Tolerance mm : + 0.25
 Rated speed rpm : 520

guide sleeve travel mm : 3.40
 Tolerance mm : + 0.25
 Rated speed rpm : 1427
 guide sleeve travel mm : 12.00
 Tolerance mm : + 0.25
 Rated speed rpm : 1520
 guide sleeve travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1401
 Rack travel in mm : 12.20
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
 Aneroid pressure hPa : 1500
 Del. quantity cm³/1000 strokes : 259.0
 Tolerance cm³/1000 strokes : + 1.0
 Check tolerance cm³/1000S. : + 4.0
 Spreed
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 110.0
 tolerance degree : + 4.0
 RATED SPEED
 rack travel mm : 12.20
 Rated speed rpm : 1185
 Tolerance 1/min : + 5
 Check speed 1/min : + 10
 rack travel mm : 4.00
 Rated speed rpm : 1295
 Tolerance 1/min : + 15
 Check speed 1/min : + 20

rack travel mm : 0.70
Tolerance mm : + - 0.70
Rated speed rpm : 1450

LOW IDLE

control lever position degree : 73.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : > 7.60

Testing:

Rated speed rpm : 275
rack travel mm : 5.00
Tolerance mm : + - 0.10

Rated speed rpm : 395

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 13.50
Tolerance mm : + - 0.05

Rated speed rpm : 1130
rack travel mm : 13.20
Tolerance mm : + - 0.10

Rated speed rpm : 1000
rack travel mm : 13.35
Tolerance mm : + - 0.10

Rated speed rpm : 800
rack travel mm : 13.45
Tolerance mm : + - 0.10

Rated speed rpm : 650
rack travel mm : 12.70
Tolerance mm : + - 0.10

Rated speed rpm : 500
rack travel mm : 11.90
Tolerance mm : + - 0.10

Rated speed rpm : 1150
rack travel mm : 13.20
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 875
Pressure hPa : 1500
rack travel mm : 13.50
Tolerance mm : + - 0.10

Rated speed rpm : 875
Pressure hPa : -
rack travel mm : 9.15
Tolerance mm : + - 0.10

MEASUREMENT

Rated speed rpm : 875
Pressure hPa : 450
rack travel mm : 12.10
Tolerance mm : + - 0.05

Pressure hPa : 150
rack travel mm : 9.80
Tolerance mm : + - 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1500
Rated speed rpm : 1130
Del. quantity cm³/1000 strokes : 232.0
Tolerance cm³/1000 strokes : + - 2.0
Check tolerance cm³/1000S. : + - 5.0
Spread Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

rack travel mm : 13.35
Tolerance mm : + - 0.10

Aneroid pressure hPa : -
Rated speed rpm : 600
Del. quantity cm³/1000 strokes : 170.0

Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 5.00
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet